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ENVIRONMENTAL STUDIES OF MACROZOOBENTHOS, AQUATIC MACROPHYTES,
AND JUVENILE FISHES IN THE ST. CLAIR-DETROIT RIVER SYSTEM, 1983-1984

by

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EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers is considering the extension of operation of the Locks at Sault Ste. Marie, Michigan, from 8 January \pm 1 week to 31 January \pm 2 weeks. This study was undertaken to provide part of the information needed by the Corps for the preparation of a Supplemental Environmental Impact Statement addressing the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent extension of the navigation season in the St. Clair-Detroit River system (SCDRS) to mid-winter. The objectives of this study were (1) to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fish that might adversely be affected by an extension of winter navigation and (2) to predict or evaluate the potential environmental impact of an extended navigation season on SCDRS. An extensive ice jam on the St. Clair River in spring 1984 and the associated ice breaking activities provided an opportunity to evaluate between-river and between-year variation in the abundance and distribution of biota relative to differences in ice cover and related shipping activities. The study area encompassed the region between Port Huron (at southern Lake Huron) on the north and the lower end of Grosse Ile (mouth of the Detroit River) on the south, including the St. Clair River, Lake St. Clair, and the Detroit River. The St. Clair River is 39.1 mi long and receives water from Lake Huron; mean annual discharge into Lake St. Clair during the study period was 212,000 ft³/s. Lake St. Clair has a surface area of about 430 mi², a mean depth of 11 ft, and a maximum natural depth of 21 ft. Flushing time of the lake is 5 to 7 days. The Detroit River is 31.9 mi long and receives water from Lake St. Clair; and the mean annual discharge rate into Lake Erie was 216,000 ft³/s. The shipping channel running through the system has a minimum statutory depth of 27 ft, which is maintained by dredging.

Ice cover is limited or absent from both the St. Clair and Detroit rivers during normal winters, but is usually well developed on Lake St. Clair. However, ice may enter the St. Clair River from Lake Huron mainly under the influence of northerly winds. The current carries the floes downstream until they meet the resistance of the solid ice cover in or upstream from Lake St. Clair. This ice cover increases as more ice enters the system and may extend upstream nearly to Lake Huron. During most of the winter, a large natural ice arch becomes lodged in the narrowing confines at the outlet of Lake Huron and prevents ice from entering the river. This condition usually lasts through the winter but may be disrupted by strong southerly winds, particularly in March and April, which break up the ice arch and push the ice field away from the river mouth. A wind change back to the north pushes the ice field back into the river and if no ice arch forms, floe ice may enter the river in large quantities to form a huge ice jam, as it did in 1984. Ice jams of roughly similar magnitude occurred in the St. Clair River in 1901, 1920, and 1942.

Concentration of toxic materials are elevated in the sediments in several areas in the SCDRS. No contaminant data were collected in the present study, but past work has demonstrated that the presence of contaminants affects the

health and abundance of fish, macrophytes, and particularly macrozoobenthos. In the St. Clair River levels of polychlorobiphenyls (PCBs) exceeded the Ontario guidelines (50 ppb) and International Joint Commission (IJC) objectives (100 ppb); certain areas can be classified as being heavily polluted with mercury (> 1 ppm), as judged by the U.S. Environmental Protection Agency (EPA) standards; oil and grease levels were within acceptable tolerances. In Lake St. Clair, cadmium levels (> 1 ppm) exceeded Ontario's guidelines and mercury levels exceeded EPA's guidelines. In the Detroit River, PCB, oil and grease, cyanide, chromium, cadmium, and mercury levels exceeded EPA's guidelines for heavily polluted sediments.

A total of 756 macrozoobenthos samples were collected with a Ponar grab along 21 transects in the St. Clair River, Lake St. Clair, and Detroit River in May and October in 1983 and 1984. Stations along the transects were at three locations: on the sloping side of the shipping channel (channel stations), immediately adjacent to the channel on the crest of the channel slope (near-channel stations), and between the crest of the channel slope and the adjacent shoreline (off-channel stations). Aquatic macrophytes were collected during late June, late July-early August, and early September at Stag, Fawn, and Russell islands in the St. Clair River, and at Belle Isle, Point Hennepin, and Stony Island in the Detroit River. A sampling grid composed 500-ft-square blocks was used to distribute sampling effort. Grapnel hauls were made at the grid intersections and Ponar or hand-harvested samples were taken within individual blocks. Juvenile fish were sampled with hoop nets at the same locations at which macrophytes were collected, during late May, late June, late July-early August, early September, and early October in 1983 and 1984. At each location, two nets were set in submersed aquatic vegetation, and two others in nearby non-vegetated areas. A total of 40 net sets were made at each location during the two years of the study.

The diversity of macrozoobenthos within SCDRS was highest in the upper Detroit River, where we identified 101 taxa, and lowest in Lake St. Clair, where we recorded 65; we collected 98 taxa in the upper St. Clair River, 95 in the lower St. Clair River, and 80 in the lower Detroit River. Identifications usually were made only to genus, family or higher level; however, as judged by our species identification of adult aquatic insects, the list of taxa of macrozoobenthos in SCDRS might easily exceed 300 species.

The densities of most taxa of macrozoobenthos were significantly higher in 1983 than in 1984, in October than in other months, and at the off-channel stations than at other stations. Densities of most taxa were highest in the St. Clair River. Of particular interest were the taxa with significantly higher populations in 1983 than in 1984. If the low densities occurred mainly in spring 1984 in the St. Clair River and no recovery occurred by fall 1984, we might postulate that the ice jam in May 1984 caused long-term damage. Densities of nine taxa were lower in the spring in 1984 than in 1983: Amnicola, Chironomidae, Gammarus, Harpacticoida, Hyalella, Isopoda, Nematoda, Oecetis, and Turbellaria. The lower density were restricted to the St. Clair River, particularly in the lower section. Among these taxa, the densities of

Nematoda, Isopoda, Gammarus, Chironomidae, and Oecetis had recovered in fall 1984 to levels equalling or exceeding those in fall 1983; the densities of Turbellaria, Harpacticoida, Hyalella, and Amnicola were still low in fall 1984. Mean biomass ranged from 0.03 to 4.84 g/m² over the 21 transects. Biomass was highest in the Russell Island and Belle Isle areas and lowest near lower Lake Huron. Average total densities ranged from 976 to 96,684/m² over the 21 transects in 1983-1984, and the average number of taxa at each transect ranged from 9 to 38.

Twenty taxa of submersed macrophytes were collected in the St. Clair and Detroit rivers in 1983 and 1984; the most common, in order of frequency of occurrence, were Chara spp., narrow-leaf forms of Potamogeton spp., Vallisneria americana, Potamogeton gramineus, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis. Other taxa occurred in less than 13% of the samples. Chara spp. was the most commonly collected taxon in the St. Clair River and V. americana was the most common in the Detroit River. The total number of taxa at each location ranged from 7 to 14 and was highest in September. Percent occurrence of individual taxa during each sampling period between 1983 and 1984 varied less than 10% at each location.

In the St. Clair River in June, most submersed macrophyte taxa were less abundant in 1984 than in 1983. However, a paired comparison of all taxa showed significant differences only at Russell Island. A similar decline in biomass of dominant taxa occurred in the Detroit River, but was significant only at Belle Isle. Biomass of most taxa in September was similar in 1983 and 1984. Changes in the areal extent of the submersed macrophyte beds also showed similar trends between years, months, and locations.

Emergent macrophyte taxa were present in only two of the sampling grids at the six locations. A small bed of Scirpus acutus was at the tip of Fawn Island. Stony Island had extensive beds of Typha latifolia and Sparganium eurycarpum, usually in monotypic stands, and the species of Eleocharis, Phalaris, Sagittaria, and Scirpus occurred together in mixed stands. Mean dry weight biomass of individual taxa varied from 10 to more than 2000 g/m².

We captured 1,771 fish of 36 species in 1983 and 1,038 fish of 26 species in 1984. Of the total of 39 species represented, only 7 were common (> 50 fish collected in each year); yellow perch, rock bass, hornyhead chub, spottail shiner, striped shiner, rainbow smelt, and white sucker collectively made up 86% of the total for both years combined. Only yellow perch and rock bass were common to both rivers in both years. An average of 2.4 species was collected per net set in 1983 and 1984. The number of species collected was higher in the Detroit River than in the St. Clair River. The mean catch of all species combined was nominally larger in 1983 than in 1984, increased from May to October, was larger in the St. Clair River than the Detroit River, and was larger in nets set in vegetation than in those set in non-vegetated areas. However, most of these differences were not significant at the 0.05 level. The mean catches of yellow perch and rock bass were nominally higher in 1983 than 1984, but were significantly higher only at Russell Island and Belle

Isle. Significantly more yellow perch were caught in nets set in vegetation than in those set in non-vegetated areas at Fawn Island. A statistically significant relation between catch and vegetation was not observed for other species or at other locations. Most of the fish caught were adults.

The number of taxa of macrozoobenthos collected in this study (160) exceeded that in any previous work on the SCDRS. Comparison with other large river systems indicated that the diversity and density of macrozoobenthos is much greater in SCDRS than in most other rivers of the world. Sediment particle size and contaminant distribution basically determined the benthic community in the SCDRS. The St. Clair River, with its wider range of sediment size and diverse macrophyte community, was dominated by pollution intolerant aquatic insects, amphipods, and snails. Diversity was similar in the area around Belle Isle in the Detroit River. Low diversity of macrozoobenthos in the lower Detroit River reflected a moderate effect of contaminants. The constant flow, low turbidity, and luxuriant macrophyte growth in SCDRS were major factors in stabilization and in the incorporation of fine deposits into the sediments of the off-channel areas. As a result, densities and biomass of macrozoobenthos were much higher than in the shifting sand habitat characteristic of most rivers.

Community diversity, biomass, and percent coverage of macrophytes has remained stable in SCDRS since at least 1978. The taxonomic composition and abundance of aquatic macrophytes probably reflects the stability of flow more than any other environmental variable. The lack of spates provides long-term stability to the system. Narrow-leaf forms of *Potamogeton* spp. were more common at shoal areas at the head and side of islands in SCDRS than along the shores of both mainlands. The maximum biomass estimates for the SCDRS were on the low side of the range reported for aquatic macrophyte stands in rivers at temperate latitudes (110-520 g/m²). We found the highest biomass in September at every island, although biomass values for September were not significantly different from those for July-August at Belle Isle and Pt. Hennepin. Turbidity may be high enough in the Detroit River to prevent development of certain species of submersed macrophytes in the deeper littoral areas.

This was the first study of the juvenile fish community in the near-channel areas of SCDRS. Most species in the vicinity of these island shoals were either rare, transient species, or preferred other areas of the river. It is also possible that we were not adequately sampling this community. We found that the tendency for catches of fish to be higher in plant beds than in non-vegetated areas, may be species-specific, and depend on location; the tendency was also stronger in 1983 than 1984, and was correlated with season. Three of the four common species inhabiting the island shoals were more abundant in vegetated than in non-vegetated areas.

The ice jam in spring 1984 appeared to affect at least two of the three groups studied. Nine of the 24 most abundant taxa of macroinvertebrates declined in abundance in spring 1984, but only in the St. Clair River. Six of these taxa had recovered in fall 1984 to levels equalling or exceeding those

in fall 1983 and the densities of the other taxa were within 30% of those in 1983. Areal coverage by submersed macrophytes was somewhat less in spring in 1984 than in 1983, particularly in the St. Clair River, but recovered to 1983 levels by fall 1984. Plant biomass varied between years and locations, and no consistent differences could be attributed to the ice jam. Catches of fish were lower in 1984 than in 1983, but differences in numbers between location and month were inconsistent. Observed differences in the plant community could be attributed to lower temperatures, and ice-scour may have reduced the density of several taxa of macrozoobenthos.

This study was conducted to describe the distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in SCDRS in 1983-84. We believe that we have addressed this objective for the open water season on SCDRS within the constraints imposed by our data set, and that our study provides a baseline data set that can be used to evaluate the major effects of any future extension of the navigation season. We do not believe that the results of our study can be used alone to answer the question of whether increased winter vessel traffic will have a measurable effect on the biota of SCDRS. Such an evaluation would require minimally the development of one or more realistic scenarios in which the potential effects of vessel passage in the extended season on ice, water, and sediment movement in the SCDRS was adequately characterized, so that the impact of these physical changes on biota could be examined over the range of expected conditions. Although some adverse effects may have been associated with the ice jam in April 1984, we cannot provide evidence to show that the ice jam was caused or exacerbated by navigation, or that the jam simulated conditions that might result from vessel operation in January or February. We believe that an evaluation of the potential impacts of winter navigation on SCDRS would be facilitated by the development of an energy flow model plus an age-structured fishery model. Research funded by the U.S. Army Corps of Engineers on SCDRS has provided a substantial base for development of models of these kinds. Additional data are needed on phytoplankton, periphyton, zooplankton standing crop and production, and terrestrial inputs to complete the energy budget. This information would permit quantification of the simultaneous effects of all components, according to their interrelationships in the ecosystem, and avoid the problem associated with a piecemeal evaluation of the individual components. Such models would be useful in partitioning impacts, so that rational remedial strategies and mitigation could be attempted.

CONTENTS

ABSTRACT	Page ii
PREFACE	iii
EXECUTIVE SUMMARY	iv
INTRODUCTION	1
DESCRIPTION OF THE STUDY AREA	2
MATERIALS AND METHODS	8
Macrozoobenthos	8
Aquatic Macrophytes	10
Juvenile Fish	13
RESULTS	14
Macrozoobenthos	14
Taxonomic composition	14
Major Taxa and Their Distribution	23
Biomass	40
Density and Diversity	40
Physical Characteristics of the River	40
Relationships between Macrozoobenthos and Physical Environment	43
Aquatic Macrophytes	43
Distribution of Submersed Plants	43
Distribution of Emergent Plants	53
Abundance of Submersed Plants	55
Abundance of Emergent Plants	59
Areal Extent of Submersed Macrophyte Beds	62
Relationship between Macrophytes and Physical Environment	65
Juvenile and Adult Fish	70
Composition and Distribution of Catch	70
Abundance	75
Relationship between Fish and Physical Environment	86
DISCUSSION	93
Distribution and Abundance of Macrozoobenthos	93
Distribution and Abundance of Submersed Macrophytes	97
Distribution and Abundance of Fish	102
Characterization of SCDRS Habitats	104
Spring 1984 Ice Jam	108
CONCLUSIONS AND RECOMMENDATIONS	109
LITERATURE CITED	111
APPENDICES	
A: Sampling Locations for Macrozoobenthos	
B: Macrozoobenthos Ponar Grab Data	

- C: Density and Percent Frequency of Occurrence of Macrozoobenthos - A Summary by Taxon, Year, and Location
- D: Density and Total Biomass of Macrozoobenthos - A Summary by Year, Month, Transect, and Station
- E: Macrozoobenthos Ponar Grab Biomass Data
- F: Macrozoobenthos Physical Data
- G: Macrozoobenthos Physical Data - A Summary
- H: Macrozoobenthos ANOVA Tables
- I: Aquatic Macrophyte Sampling Locations
- J: Grapnel Collections of Submersed Macrophytes
- K: Submersed Macrophyte Grapnel Data - A Summary
- L: Ponar Grab Collections of Submersed Macrophytes
- M: Collections of Emergent Macrophytes
- N: Index Charts for Aerial Photographs and Photographs of Macrophyte Study Areas
- O: Macrophyte Distribution Maps
- P: ANOVA Tables of Macrophytes
- Q: Catch Data for Hoop Nets
- R: ANOVA Tables for Fish
- S: Physical Data for Hoop Net Sites

ENVIRONMENTAL STUDIES OF MACROZOOBENTHOS, AQUATIC MACROPHYTES, AND JUVENILE FISHES IN THE ST. CLAIR-DETROIT RIVER SYSTEM, 1983-1984

INTRODUCTION

The U.S. Army Corps of Engineers (Corps) is considering the extension of operation of the Locks at Sault Ste. Marie, Michigan, from 8 January \pm 1 week to 31 January \pm 2 weeks. To provide information needed in the preparation of a Supplemental Environmental Impact Statement addressing this extension in the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent increase in vessel traffic in the St. Clair-Detroit River system (SCDRS), the Corps funded a comprehensive environmental study of SCDRS in 1983-1985. The SCDRS includes the St. Clair River, Lake St. Clair, and the Detroit River. The present study of macrozoobenthos, aquatic macrophytes, and juvenile fish in SCDRS is an integral part of that comprehensive study. Other components of the Corps-funded research on this system include those undertaken by the U.S. Army Cold Regions Research and Engineering Laboratory on sediments and water chemistry, by the Michigan Department of Natural Resources on adult fish populations and anglers' catches, and by the U.S. Fish and Wildlife Service (Sandusky Biological Station) on fish spawning and nursery areas (Muth, K. M. et al. 1986).

The objectives of the present study were (1) to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fish within SCDRS, and (2) to predict the potential environmental impact of an extended navigation season on these organisms in SCDRS.

Currently (1986) there is some navigation on SCDRS during the proposed extension period. This is the contemporary baseline condition, and extension of lock operation would result in increased vessel traffic in the system over and above the 1986 situation. Ice cover is limited or lacking in both St. Clair and Detroit rivers during normal winters, but usually is well developed on Lake St. Clair. Potential impacts of extended lock operation would typically be evaluated on the basis of anticipated or modeled considerations involving the biology, distribution and abundance of organisms in relation to ship movement and ice breaking during winter ice conditions. However, an extensive ice jam (described later), that occurred in spring 1984 on the St. Clair River, provided an opportunity to evaluate differences in abundance and distribution of biota that might be attributable to relatively large between-year differences in ice cover, shipping activities, and ice scour.

Concern over possible adverse impacts of winter shipping on the Great Lakes has provided impetus for a number of environmental studies on connecting channels over the past several years (Gleason et al. 1979; Hiltunen 1979, 1980; Jones 1982; Liston et al. 1980, 1981; and Poe et al. 1980). These studies were supplemented by pollution related studies on SCDRS (USACE 1980; Harlow 1965; Michigan Water Resources Commission 1967; Ontario Ministry of the Environment 1979; Texas Instruments 1975; and Thornley and Hamdy 1984). Studies on fish in SCDRS (Goodyear et al. 1982; Hatcher and Nester 1983; and

Poe 1983) documented the distribution of important taxa and their habitats. An annotated bibliography of macrozoobenthos and aquatic macrophytes in SCDRS was prepared with Corps funding (McCauley 1985). Limno Tech, Inc. (1985) developed a bibliography and summary of the water quality problems in the system. Thornley and Hamdy (1984) and the Ontario Ministry of the Environment (1979) described the impact of man's discharge of contaminants, particularly of organics and heavy metals, on the biota and habitat. Many of these studies have pointed out the importance to the fishery of the extensive, submersed macrophyte beds and their stable, macrozoobenthos-rich substrates.

One of the major environmental concerns associated with the impact of winter navigation was the possibility of increased scouring of benthic habitat by flow modifications and ice, and the displacement downstream of plants, benthos, and substrate (Poe and Edsall 1982). In the present study we focused on upstream areas of five islands and one shoal area that the USACE identified as potentially vulnerable to impact by ice scour during an extended navigation season. All six areas were extensively covered with submersed macrophytes. Aerial photographs and plant and fish samples were taken from spring to fall in 1983 and 1984 in each area. The benthos samples were collected along the main navigation channel throughout the SCDRS, in spring and fall in 1983 and 1984.

Given the possible impact of ice scour on the benthic habitat in the St. Clair River in 1984, we concentrated on statistically analyzing variation in the abundance of major taxa of macrozoobenthos between years and between rivers, in relation to physical variables and changes in fish and plant populations. We then focused our attention on variation in community structure of macrozoobenthos, plants, and fish in relation to the effects of the ice jam.

DESCRIPTION OF THE STUDY AREA

The study area extended from Port Huron on the north to the lower end of Grosse Ile on the south, including the St. Clair and Detroit rivers (Fig. 1). The surface bedrock geology in the study area dates back to the Devonian period, is of marine origin, and consists mainly of shales in the St. Clair River and Lake St. Clair, and dolomites in the Detroit River. Glaciation has modified the topography by scouring and filling. The SCDRS lies in a morainal trough and is characterized by sediments consisting of glacial till and lake and stream deposits. The rivers are incised into a bed of glacial, lake-deposited clays with thicknesses of 80-200 ft (24-61 m) in the St. Clair River (Cole 1903) and 20-140 ft (6-43 m) in the Detroit River (Mozola 1969).

The SCDRS which is 89 mi (143.2 km) long, and drops 8 ft (2.4 m) between Lake Huron and Lake Erie, can be divided into five major segments: the upper St. Clair River, the lower St. Clair River, Lake St. Clair, and the upper and lower segments of the Detroit River (Fig. 1). Most of the following hydrographic information on the system comes from Derecki (1984 a, b, c). The upper St. Clair River is 27.9 mi (45 km) long and receives water from Lake

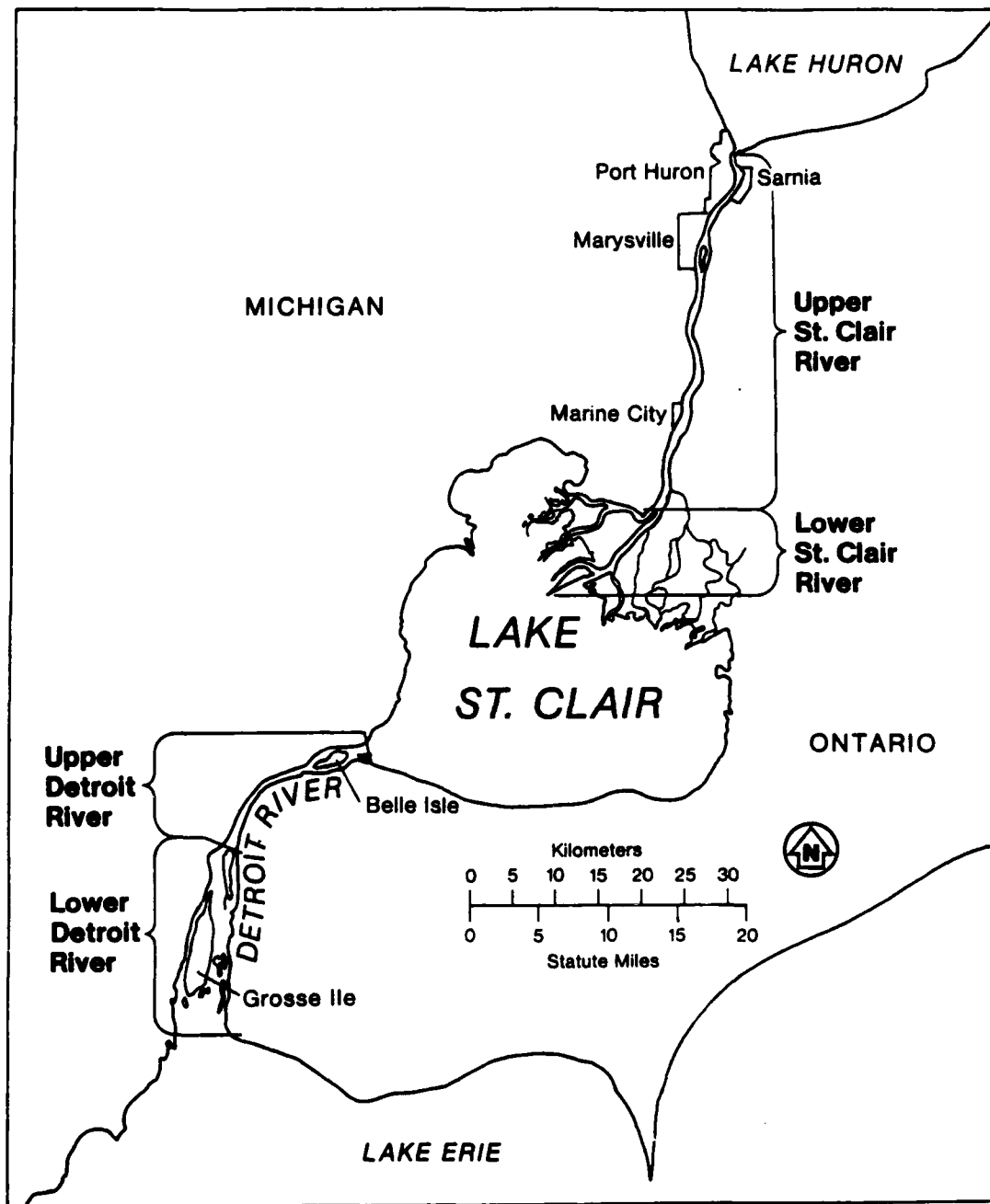


Figure 1. The St. Clair-Detroit River System.

Huron and three major tributaries (the Black, Pine, and Belle rivers). The lower St. Clair River, begins at the branching of the north and south channels near Algonac, Michigan, is 11.2 mi (18 km) long and divides to form a large delta area consisting of three main channels (north, middle, and south) and a number of secondary channels that empty into Lake St. Clair.

Width of the St. Clair River ranges from 820 to 3,940 ft (250-1200 m) and averages 2,625 ft (800 m) in the upper section. The widths of the three main channels in the delta area range from 700 to 3,000 ft (214-915 m). Mid-channel depths are 27 to 70 ft (8.2 - 21.5 m); a minimum statutory depth of 27 ft is maintained by dredging. Littoral depths are typically 6-13 ft (1.8-4.0 m). Mean annual discharge rate of the St. Clair River into Lake St. Clair was 214,000 ft³/s (6,060 m³/s) in 1983 and 209,000 ft³/s (5,920 m³/s) in 1984. These flows are about 17% higher than the historical average discharge of 180,000 ft³/s (5,100 m³/s). Velocities in the St. Clair approach 6 ft/s (1.8 m/s) in the navigational channel and range from 0.3 to 2.8 ft/s (0.09-0.86 m/s) near the channel. Total flushing time from Lake Huron to Lake St. Clair is normally about 21 hours; about one-third of this time is required to flush the delta area. Stag and Fawn Islands, 8.7 mi (14 km) and 21.7 mi (35 km) respectively, downstream from Lake Huron, are the only islands in the upper section of the St. Clair River. The delta area includes Russell, Harsens, Dickinson, and Seaway islands.

Lake St. Clair has a surface area of about 430 mi² (1,114 km²), a mean depth of 11 ft (3.4 m), and a maximum natural depth of 21 ft (6.4 m). A navigation channel 18 mi (29 km) long, which has a statutory depth of 27 ft (8.2 m) bisects the lake from the mouth of the South Channel of the St. Clair River to the head of the Detroit River. These data are based on a Great Lakes low water datum of 573.3 ft (174.7 m) above mean sea level; in 1983-1984 the water levels were 3.25 ft (1.0 m) above this low-water datum. Major tributaries are the Clinton River on the United States side and the Sydenham, Thames, Belle, and Ruscom rivers on the Canadian side. Flushing time of the lake is 5 - 7 days.

The upper Detroit River, which is 13 mi (21 km) long, receives water from Lake St. Clair. The lower Detroit River, which is 18.9 mi (30.5 km) long, begins at the head of Fighting Island, where the river separates into three channels (Trenton, Livingstone, and Amherstburg). Major tributaries are the Rouge and the Ecorse rivers, both on the U. S. side. Width of the river ranges from 1,970 to 8,450 ft (600 - 2,600 m) in the upper section, and from 4,920 to 10,400 ft (1,500 - 3,000 m) in the lower section. Mid-channel depths are 20 - 49 ft (6.2 - 15.1 m) and littoral depths are 7-20 ft (2.2-6.2 m). Mean annual discharge rate of the Detroit River into Lake Erie was 217,000 ft³/s (6,140 m³/s) in 1983 and 215,000 ft³/s (6,090 m³/s) in 1984. These flows are about 17% higher than the historical average discharge of 185,000 ft³/s (5,200 m³/s). Average flow velocities were 2 - 6 ft/s (0.6 - 1.8 m/s) in the mid-channel region and 0.1 - 1.9 ft/s (0.03-0.58 m/s) in the nearshore and near channel areas. Total flushing time from Lake St. Clair to Lake Erie is about 19 hours in the main channel. The upper river has two large islands,

Peach Island and Belle Isle, and the lower river has Fighting Island, Grosse Ile, Bois Blanc, and several small islands.

The climate in the study area is semi-maritime due to its proximity to lakes Huron and Erie. The mean annual surface air temperature is 9 - 10°C (48-50°F); however, intense cells of cold arctic air can lower temperatures as much as 28°C (81°F) over a 24-hour period. Air temperatures from December to March averaged 4.6°C lower in 1983-1984 than in 1982-1983. Air temperatures were 1.0°C higher in April-June and 1.7°C lower in July-September in 1984 than in 1983 (Fig. 2).

High winds and storms are common and significantly affect the thermal budgets of Lake Huron and SCDRS. Prevailing winds are from the west. High winds generate seiches and surges that strongly affect the lower Detroit River, causing water levels to rise or fall 2-3 ft. Wind speed and direction also sometimes affect ice buildup and cause ice jams in the St. Clair River. Typically the river remains clear of ice and only a narrow band of shore ice forms along the banks, except in the delta area. However, ice may enter the St. Clair River from Lake Huron under the influence of northerly winds. The current carries this ice downstream until it meets resistance from solid ice cover in the delta or in Lake St. Clair. When large amounts of ice enter the system, the ice accumulation may extend upstream from Lake St. Clair nearly to Port Huron (Fig. 1). During most of the winter a large natural ice arch forms at the outlet of Lake Huron and prevents ice from entering the river. This condition usually lasts through the winter, but strong southerly winds, particularly in March and April, may disrupt the ice arch and push the ice field away from the river mouth. If the ice arch does not re-form, a north wind can then push the ice field back into the river in large quantities, as it did in 1901 (Cole 1903), 1920, 1942, and 1984 (USACE 1984).

In 1984 the ice jam in the St. Clair River lasted from April 5 to April 30 (USACE 1984). On April 1 no ice existed in the St. Clair River, but a large pack of ice covered the southern portion of Lake Huron. On April 5 a large amount of ice was reported floating downstream in the vicinity of Marine City. By April 7 pack ice extended from Marysville to the mouth of the St. Clair River. The large ice pack in Lake Huron and persistent winds from the north in April choked the St. Clair River with ice until April 30. Ice as thick as 8 ft was reported. Water temperature during April in the St. Clair River was about 6°F lower than normal and a reduction in flow of almost 95,000 ft³/s (2690 m³/s) resulted in a 2-ft drop in the Lake St. Clair water level for about 3 days. During April at least 140 vessels were led through the St. Clair River by four Coast Guard ice breakers. Movement through the river at this time was slow and difficult, and several vessels ran aground.

The upper Detroit River normally does not freeze over, except in the broad, shallow area between Belle Isle and the United States mainland. Minor ice jams occur when large quantities of floe ice from Lake St. Clair encounter the narrow channel and shallow ice-covered areas in the lower river, which block downstream passage of the floe ice. Easterly winds can also cause

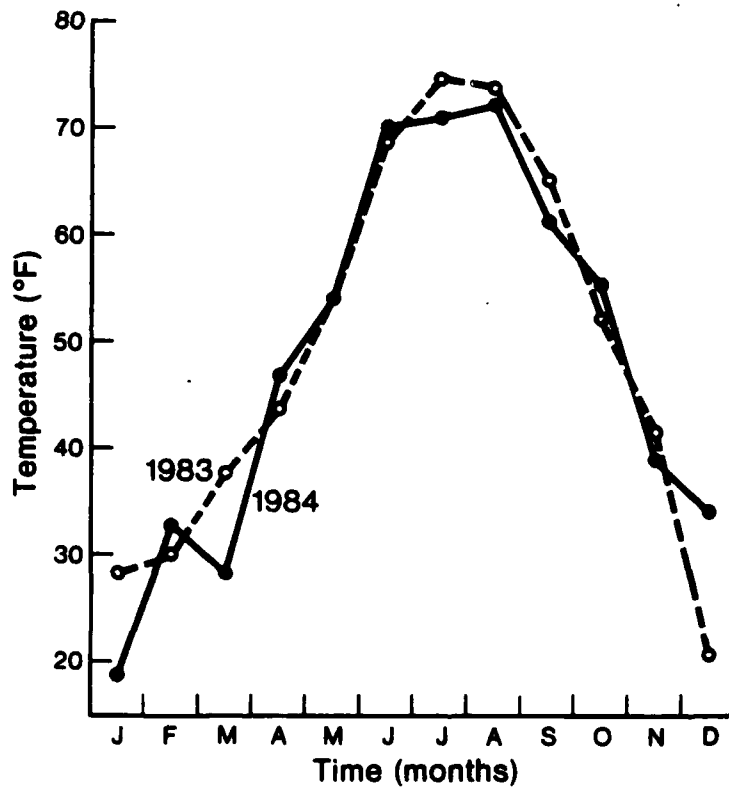


Figure 2. Mean monthly air temperatures in 1983 and 1984 at Windsor, Ontario, airport.

jams by moving Lake Erie ice into the lower river. Ice cover develops in the lower river in the broad, shallow expanses adjacent to the many islands; however, the main navigation channels are generally open. Occasionally the river fills completely with ice, when there is heavy ice movement from Lake St. Clair and the river mouth is blocked by ice from Lake Erie (Derecki 1984 c).

Concentrations of toxic materials in sediments are elevated in several areas within SCDRS. Although we collected no data on contaminants, past work has demonstrated that contaminants adversely effect the health and abundance of fish, macrophytes, and particularly macrozoobenthos (Limno-Tech, Inc. 1985). Concentrations of pollutants in the sediments of SCDRS are relatively high and some exceed EPA criteria; potential contaminants treated by Ontario's guidelines and IJC objectives are polychlorinated biphenyls (PCB), hexachlorobenzene (HCB), octachlorostyrene (OCS), phenol, polyaromatic hydrocarbons (PAH), cyanide, oil and grease, cadmium, chromium, and mercury. The contaminated areas tend to be near shore, and near point sources, but also include depositional zones far removed from known point sources. The distribution of contaminants in sediments is difficult to assess--as it is in most riverine environments. The major point source in the St. Clair River is the Sarnia industrial complex. The reported ranges of concentrations of contaminants in the upper St. Clair River follow: PCBs, 0-10,000 ppb; OCS, 0-193 ppb; oil and grease, 250-600 ppm; and mercury, 0.1-58 ppm. PCB levels exceed the Ontario guidelines (50 ppb) and IJC objectives (100 ppb), and mercury in certain areas (>1 ppm) exceeds the EPA guideline (no standards exist for OCS in sediments). Oil and grease levels are acceptable in most areas. Concentrations of contaminants are lower in the St. Clair delta, but sampling there has been limited. Deposition of sediments in Lake St. Clair in the mid-lake area near the navigational channel has resulted in the following ranges of concentrations: PCB 0-50 ppb, HCB 36-99 ppb, OCS 0-30 ppb, cadmium 1-2 ppm, and mercury 1-3 ppm. Cadmium concentrations (>1 ppm) exceed Ontario's guidelines and mercury levels indicate heavy pollution; no guidelines exist for HCB in sediments. The entire Detroit River--particularly the lower section associated with the industrial complex on the U.S. shore--is the most severely polluted area in SCDRS. Pollutants include PCB 0-3800 ppb, HCB 0-36 ppb, OCS 0-10 ppb, oil and grease 100-29,000 ppm, cyanide 0.25-2.94 ppm, phenols 0-1 ppm, chromium 4-330 ppm, mercury 0-8 ppm, and cadmium 0-17 ppm. PCB, oil and grease, cyanide, chromium, cadmium, and mercury levels exceed EPA's guidelines for heavily polluted sediments. No standards exist for phenol or PAH. A total of 15 PAH compounds have been found at detectable levels, and mean concentrations of individual compounds measured have been as high as 39 ppm. Some of these data were collected in the 1970's, and some pollutants have declined since then. Hamdy and Post (1985) concluded that mercury in superficial sediments of the Detroit River declined substantially between 1970 and 1980. Pugsley et al. (1985) could not determine whether PCB levels in sediments had decreased or remained reasonably static in SCDRS over the last 10 years, and Mudroch (1985) found metal concentrations in the Detroit River to be significantly higher in 1983 than in 1969-73. More data are needed to provide a comprehensive and current assessment of contaminants in sediments, and to establish standards.

MATERIALS AND METHODS

MACROZOOBENTHOS

A total of 756 macrozoobenthos samples were collected with a standard Ponar grab (484 cm²) along 21 transects in the St. Clair River, Lake St. Clair, and the Detroit River (Fig. 3; Appendix A). The sampling locations were considered to be areas most likely to be affected by ice scour or vessel passage during winter navigation. Triplicate samples were taken at each of three stations on each transect in May and October in 1983 and 1984. Stations were located on the sloping side of the shipping channel (channel stations), immediately adjacent to the channel on the crest of the channel slope (near-channel stations), and between the crest of the channel slope and the adjacent shoreline (off-channel stations). Sampling was most difficult on the channel slope because the hard, current-swept bottom could not be sampled effectively with a Ponar grab; it was particularly difficult in the lower Detroit River, where the bottom type is mainly bedrock and boulders. Samples were concentrated in the field by washing them in a standard U.S. No. 30 sieve (0.65 mm mesh), preserved in a 10% formalin-phloxine B mixture, and taken to the laboratory for processing.

In the laboratory, each sample was divided into aliquots of a size convenient for processing and the organisms were then extracted manually from each. The residue from the aliquots collectively composing a sample was then pooled and mixed with a sugar solution to float any remaining organisms, which were then extracted manually from the sugar solution and added to those previously removed from the sample. Samples that required more than 20 man-hours to process (i.e., samples containing large numbers of Hydra and small oligochaetes) were reduced as follows. All organisms except Hydra and small oligochaetes were removed from the sample and the rest of the sample was then subdivided with a Folsom Splitter until a 1/8 aliquot was obtained. In this aliquot, the total numbers of Hydra and oligochaetes were counted and these counts were then used to estimate the total number of organism of each taxon that was present in the whole sample. Macrozoobenthos density data (No./m²) at each station is shown in Appendix B and summarized in Appendices C and D.

Macrozoobenthic organisms were placed on a glass fiber filter, dried in an oven at 60°C for 24 hours, and weighed to the nearest 0.1 mg for biomass determinations. Ash-free dry weight was obtained by reheating the dried samples in a muffle furnace at 525°C for 1 hour. The biomass data are given in Appendix E.

Organisms picked from the samples were identified to the lowest feasible taxon before they were dried. Most were identified to genus; when mature specimens were available (e.g. clams, leeches, copepods and cladocerans), identification was to species; and other forms such as nematodes, turbellarians, oligochaetes, and mites were identified only to family level or a higher taxon. Specimens of leeches were sent to Don Klemm (U.S. Environmental

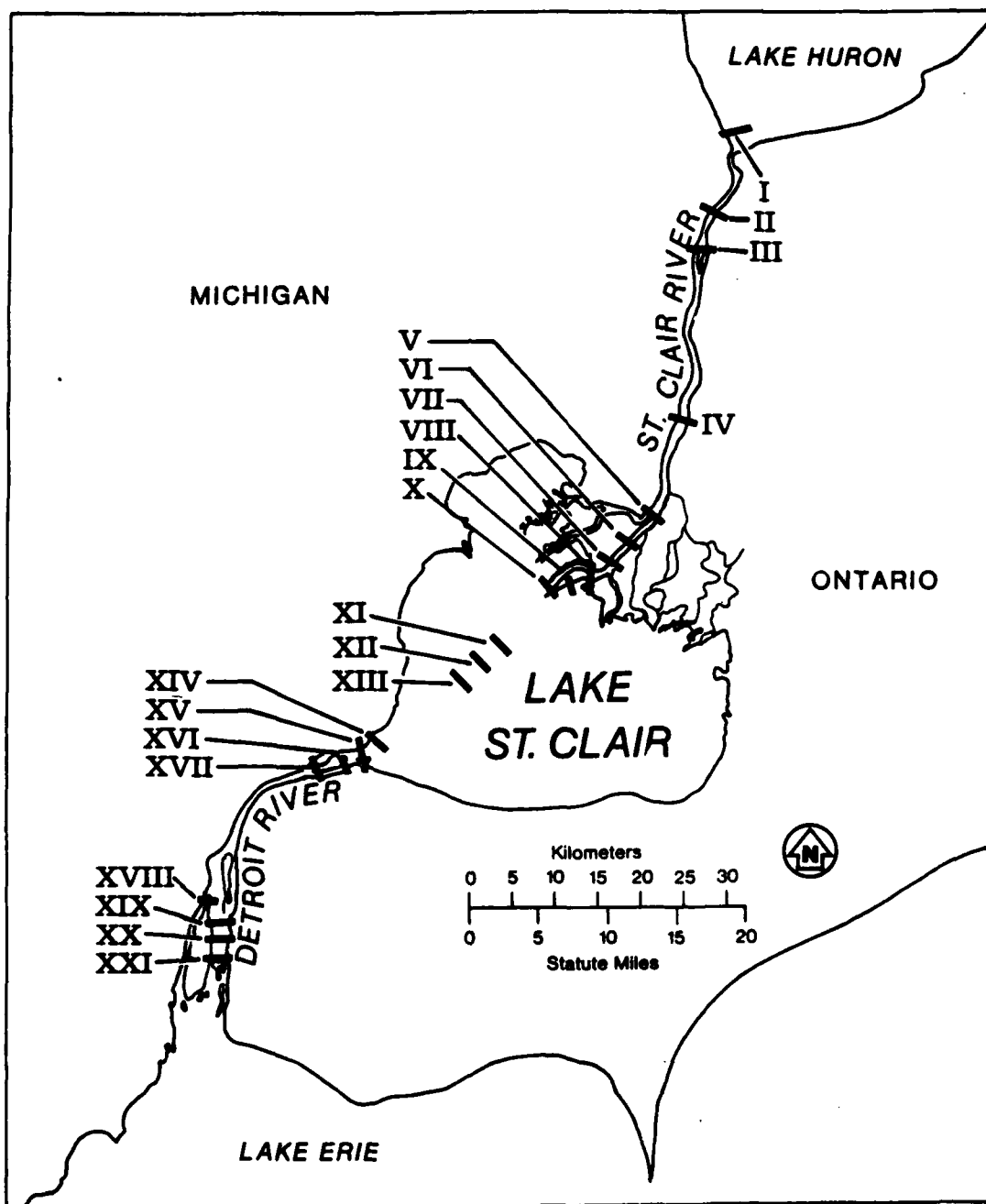


Figure 3. Macrozoobenthos sampling locations.

Protection Agency), and freshwater mussels to Tom Freitag (Corps, Detroit District), for identification and verification. To complement the collection of immature insects and to develop a species composition list of aquatic insects living in SCDRS, adult insects were collected periodically with sweepnets and light-traps from May to October during both years. Adults of major taxa were sent to the following specialists for identification and verification: Brian Armitage, Athens University, Athens, AL (Trichoptera); Ken Tennessen, Tennessee Valley Authority, Decatur, AL (Odonata); Manny Pescador, Florida Agricultural and Mechanical University, Tallahassee, FL (Ephemeroptera); and Ole Saether, University of Bergen, Bergen, Norway (Chironomidae).

At each macrozoobenthos station we recorded Loran coordinates (TI 9900 Loran C Navigator; accuracy given in manual as ± 300 ft), water depth (sounding line or Ray Jefferson Model 202, depth computer), surface and bottom measurements of current velocities (Marsh McBirney Model 201 Portable Water Current Meter), bottom type (e.g. silt, sand) as estimated by visual and textural means, and water temperature (Yellow Springs Instruments Model 54 Oxygen Meter¹). The physical data set is given in Appendix F and summarized in Appendix G.

The macrozoobenthos data were subjected to analysis of variance (ANOVA) to test for significant ($P < 0.05$) differences in abundance between stations, transects, months, and years (Appendix H). We transformed density estimates using square root transformations $(No./m^2 + 0.5)^{1/2}$, so that ANOVA assumptions of normality and homogeneity of variance were better met. We used Tukeys Studentized Range Test to distinguish among levels of abundance at each station, transect, month, and year. To assess the relationship between macrozoobenthos density and environmental variables (depth, water velocity, bottom type, and temperature), we used the Pearson Product-Moment Correlation procedure. We performed all statistical analyses with SAS (SAS Institute Inc. 1982).

AQUATIC MACROPHYTES

Aquatic macrophytes were collected during late June, late July-early August, and early September at Stag, Fawn, and Russell islands in the St. Clair River, and at Belle Isle, Point Hennepin, and Stony Island in the Detroit River. Plants were sampled at the upstream end of each island and on the side of the island adjacent to the navigation channel (Fig. 4). A sampling grid with 500-ft-square blocks was used to distribute sampling effort at each site (Appendix I). The grid was set by using a 100-ft tape, staff buoys, and line-of-sight compass readings on shore structures. After the grid buoys were in place, we made grapnel hauls at the grid intersections and collected Ponar or hand-harvested samples within individual blocks.

¹/ Mention of name brands does not imply Government endorsement of commercial products.

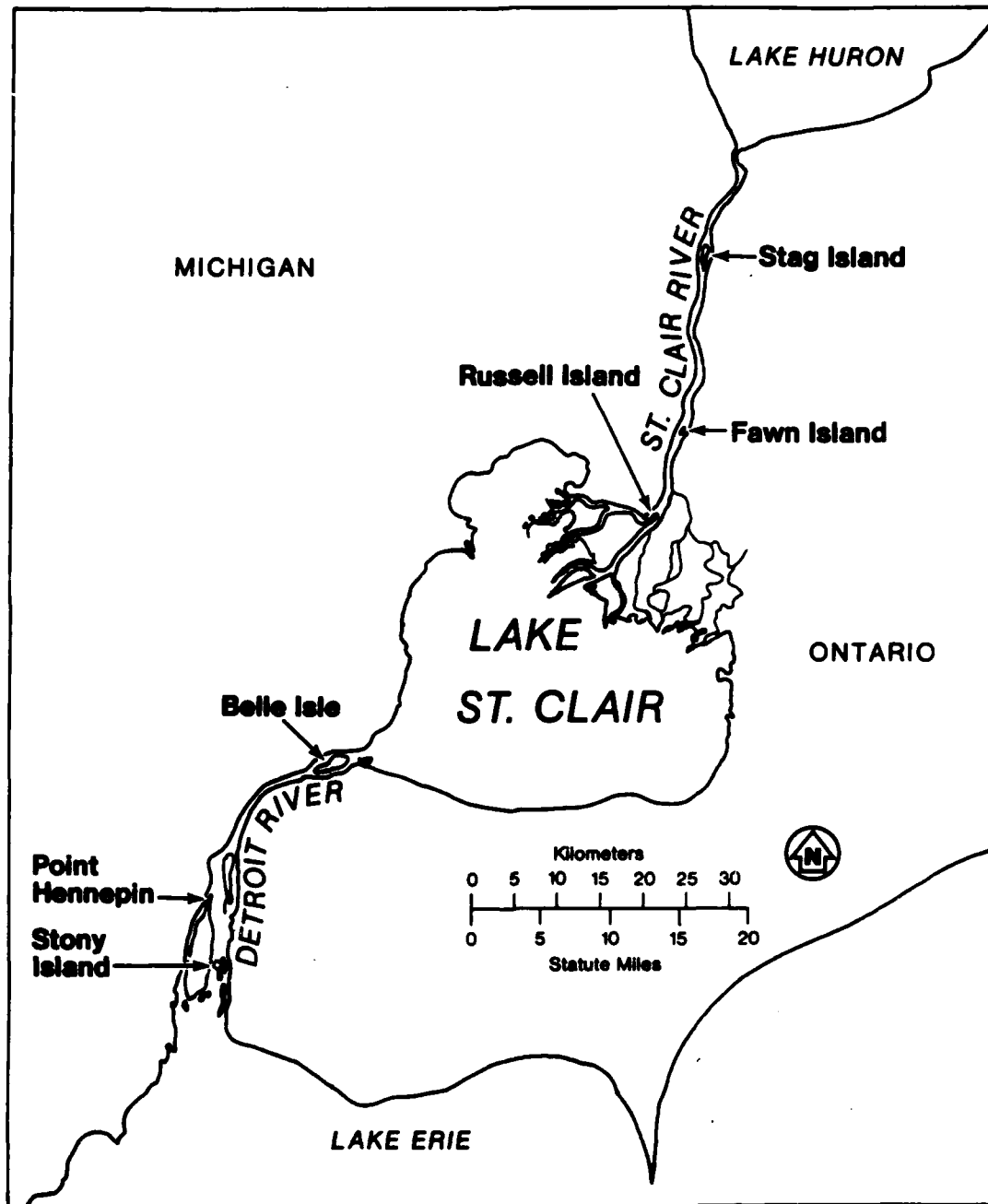


Figure 4. Sampling locations for aquatic macrophytes and juvenile fish.

The grapnel was lined with 1-cm-square mesh hardware cloth and was dragged along the bottom for a distance of 30 ft at each grid intersection. Submersed macrophytes collected with the grapnel were sorted to species, the percent abundance of each taxon collected was estimated, the total weight of the sample was taken, and the sample was discarded in the field. Water depth at grapnel stations was 2-35 ft. The data set is in Appendix J and is summarized in Appendix K.

Once the grapnel collections were completed, the dominant stand of submersed or emergent vegetation in each block was selected on the basis of the grapnel collections and visual observation. Each block was then sampled in triplicate, either with a standard Ponar dredge (for submersed plants), or by hand with a 0.6-m² steel hoop (for emergent plants). Sampling depths were 2 to 13 ft. At several locations, some blocks contained no vegetation and others contained several stands that were considered to be dominant. Blocks that had several dominant or subdominant stands were revisited and were sampled in triplicate until the following minimum number of samples had been obtained during each sampling period at each location:

St. Clair River

Stag Island	60
Fawn Island	44
Russell Island	36

Detroit River

Belle Isle	40
Point Hennepin	56
Stony Island	44

Samples of vegetation from each Ponar grab or steel hoop collection were placed in plastic bags, stored in a portable cooler, and transported to the laboratory. In the laboratory, macrophytes were sorted and identified by consulting taxonomic keys (Hotchkiss 1967, 1970; and Voss 1972). Dry weight (105°C for 24 hours) and ash-free dry weight (525°C for 24 hours) of each taxon in each sample was determined to the nearest 0.1 mg and reported as grams of plant matter per square meter of substrate sampled. Data for submergent macrophytes are in Appendix L and those for emergent macrophytes are in Appendix M. The analysis was done on dry weight biomass, but results can be converted to ash-free dry weight (AFDW) by using the following equation: $\log_e \text{ AFDW (g)} = -0.5436 + 0.9984 \log_e \text{ dry weight (g)}$, where $n = 4100$ and $R^2 = 96\%$.

We encountered taxonomic difficulties with the narrow-leaf pondweeds and the Potamogeton gramineus-praelongus-illinoensis group. There were at least two narrow-leaf pondweeds in SCDRS (P. pectinatus and P. filiformis), that were difficult to identify to species when they were without flowers or seeds. Consequently we routinely identified them as narrow-leaf forms of Potamogeton and in the text refer to them as Potamogeton spp. Potamogeton natans, a broad-leaf form in its early stages of development, is superficially characterized by narrow leaves. Early in the season we identified it only as Potamogeton spp. Identification of P. gramineus, P. praelongus, P. illinoensis, and the occasional hybrid was difficult without seed structures, due to variations in leaf form (which depend on temporal and spatial growing conditions). Schloesser and Manny (1982), in an extensive survey of SCDRS in fall 1978, did not collect P.

praelongus, but recorded P. illinoensis at about 1% of the stations and P. gramineus at 6-15%. Probably P. gramineus made up 90% of this particular group of broad-leaf pondweeds in the SCDRS.

The distribution of aquatic macrophytes in the 500-ft square sampling blocks was mapped to scale by using 9- x 9-in., color, aerial photographs taken at each location during or immediately after each sampling period. The photographs were taken during mornings or afternoons when there was little cloud cover or wind, with a Wild Heerbrugg RC-8 camera (15.24-cm focal length, F 5.6 at 1/300 second) and Aerochrome MS aerographic (transparency) film (type 2448). The transparencies had a nominal scale of about 1:5000 and a minimum resolution of 1.5 m. Photograph coverage at each location was indexed on 1:15,000 scale NOAA charts by reference to landmarks visible on both the transparencies and the charts (Appendix N). Transparencies were examined with the aid of a translucent light table. The photointerpreter prepared a macrophyte map for each location and sampling period maps based on color, texture, and relative density of the submersed and emergent beds. Collateral ground truth information was also used in interpretation and preparation of the maps. One 9- x 9-in. color print (one-color balancing, no enhancement) was produced from each transparency (Appendix N) and used to construct the macrophyte maps shown in Appendix O.

At each macrophyte station we recorded Loran coordinates, water depth, surface and bottom measurements of water velocities, and incident light (Protomatic Incident Light Meter, foot candles). The physical data set for the grapnel collections is in Appendix J and is summarized in Appendix K. The physical data set for the Ponar grab collections is in Appendix L.

An ANOVA procedure was used to determine if the biomass of aquatic plants varied significantly ($P < 0.05$) among blocks, or sampling dates at each of the six islands (Appendix P). We used square root transformations to normalize the biomass estimates and Tukey's Studentized Range Test to distinguish between levels of abundance at each block, month, and year. Because replication within blocks was unequal, we used only the first three replicates (dominant stand) for analysis. This procedure resulted in a balanced design that is more accurate and computationally efficient than an unbalanced design. The Wilcoxon Signed Rank Test was used to test absolute differences between paired yearly biomass estimates of different taxa at each location and month. The Pearson Product-Moment Correlation procedure was used to assess the relation between taxa and environmental variables (depth, water velocity, and incident light).

JUVENILE FISH

Fish were sampled with hoop nets in the St. Clair River at Stag, Fawn, and Russell islands, and in the Detroit River at Belle Isle, Point Hennepin, and Stony Island (Fig. 4) during late May, late June, late July-early August, early September, and early October in 1983 and 1984. The nets were 2.5 feet in diameter and 10 feet long, and constructed of 1-inch (stretched measure)

nylon mesh. Each net was fitted with wings about 6 feet long and 3 feet high, constructed of 2-inch mesh nylon. Nets were set in the gridded area used for macrophyte sampling, in water 3-6 ft deep, for 24 hours; the net mouth faced downstream. At each location, two nets were set in submersed aquatic vegetation and two others in nearby non-vegetated areas. A total of 240 net sets were made. Fish caught in each set were sorted to species, weighed to the nearest gram, measured (total length to the nearest millimeter), and released. Age was determined by consulting age-at-length records for fishes of Ohio, including western Lake Erie (Trautman 1981). The fish data set is in Appendix Q.

We used ANOVA techniques based on a factorial model for comparing catches. Because the lack of vegetation in spring 1984 unbalanced the study design for that year, we computed by regression with dummy variables. The factorial model included the effects of location (river); month and year, which were fixed; and the effect of plant density, which was considered random. Because of the relatively large number and levels of effects, we made the analysis by location (Appendix R). Catch data were normalized by using a square root transformation. The analysis was done on total catch, total number of species, and the catch of the two most common species--yellow perch and rock bass. We used Tukey's Studentized Range Test to distinguish among the levels of catch for each main effect. To assess the relation between catch and environmental variables (depth, current velocity, incident light, temperature, bottom type), we used the Pearson Product-Moment Correlation procedure.

At each station we recorded Loran coordinates, water depth, surface and bottom measurements of current velocities, incident light, bottom type, and water temperature. The physical data set for the fish collections is in Appendix S.

RESULTS

MACROZOOBENTHOS

Taxonomic Composition

The diversity of macrozoobenthos in SCDRS was highest in the upper Detroit River, where we identified 101 distinct taxa, and lowest in Lake St. Clair, where we recorded 65. We counted 98 taxa in the upper St. Clair, 95 in the lower St. Clair, and 80 in the lower Detroit River. The taxonomic composition and abundance of macrozoobenthos, by location and year, are summarized in Appendix C where the 21 transects are grouped into five geographic regions (transect numbers in parentheses): upper St. Clair River (I-V), lower St. Clair River (VI-X), Lake St. Clair (XI-XIII), upper Detroit River (XIV-XVII) and lower Detroit River (XVIII-XXI). Many of the 162 taxa listed in Appendix C are higher level designations that include unidentifiable, immature, or damaged specimens; these taxa may include genera or species already listed. However, when counting taxa by location or year, we excluded those for which

lower order taxa belonging to the same group were already listed. The list assuredly underestimates the diversity of this system because lack of suitable keys restricted most of the identifications to genus, family, or a higher level. For example, the midges are listed only to family (Chironomidae), although the qualitative work we performed on both larvae and adults of this family indicated that the group included at least 58 genera and 127 species. However, comparisons can be made of relative diversity between areas and years in Appendix C because taxonomic effort was uniform throughout the study.

A few sponges were collected everywhere except in the lower Detroit River, where none were seen (Appendix C). Bryozoa were lacking in Lake St. Clair and were scarce at other locations. Two genera of coelenterates were represented in the samples by Cordylophora lacustris (a single specimen from the upper Detroit River), and Hydra (present throughout the system and one of the most common benthic taxa collected).

The flatworm taxa Rhabdocoela and Tricladida were common at all locations and in both years in SCDRS. Rhabdocoela were more common than Tricladida, particularly in Lake St. Clair. Tricladida occurred most frequently in the Detroit River. The two taxa were combined (as Turbellaria) and analyzed statistically in the next section. A single specimen of a third flatworm taxon, Trematoda, was collected in the Detroit River.

Nemertinea and Nematoda were collected at all locations in both years. Nemertinea usually occurred in over 50% of the samples in both rivers, but in only 1-2% of the samples taken from Lake St. Clair. Nematodes were ubiquitous, occurring in over 95% of the 756 samples collected.

The annelids Oligochaeta and Polychaeta were two of the most abundant taxa in the system. Oligochaetes were partly divided into smaller taxa, including Nais, Stylaria, Branchiura, and Spirosperma, because they could be easily identified. All remaining taxa were combined as Oligochaeta and occurred in every sample from the lower St. Clair River downstream. Nais was common in both rivers, but not in Lake St. Clair. Branchiura sowerbyi was collected only in the upper Detroit River. Spirosperma occurred in at least 50% or more of all samples at all locations, and in over 90% of the samples from the Detroit River. The only polychaete found, Manayunkia speciosa, was uncommon in the upper St. Clair River, but occurred in all of the samples from Lake St. Clair.

The other annelids in the system, leeches, were not abundant, and most specimens could be identified to species. A total of 12 species were identified (Table 1), of which 11 were recorded in the St. Clair River, 5 in Lake St. Clair, and 8 in the Detroit River. The upper and lower portions of the St. Clair River had similar total numbers of species (eight and nine, respectively), but had only five species in common. Of the species found in Lake St. Clair, only Placobdella montifera was unique to the lake. Glossiphonia complanata, Helobdella papillata, and Piscicola milneri were collected only in the St. Clair River. Most species occurred in less than 10% of the samples.

Table 1. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of Hirudinea in Ponar grab samples from SCDRS in 1983-84.^{a/}

Taxon	Locality and number of samples				
	St. Clair River		Lake St. Clair (n = 108)	Detroit River	
	Upper (n = 180)	Lower (n = 180)		Upper (n = 144)	Lower (n = 144)
<u>Actinobdella</u> <u>inequifannulata</u>	T (2)	0 (0)	0 (0)	T (2)	0 (0)
<u>Batrachobdella</u> <u>phalerata</u>	0 (0)	T (2)	0 (0)	0 (0)	T (4)
<u>Erpobdellidae</u>	3 (23)	1 (5)	0 (0)	7 (23)	T (2)
<u>Erpobdella punctata</u>	1 (4)	0 (0)	0 (0)	1 (2)	0 (0)
<u>Glossiphoniidae</u>	0 (0)	0 (0)	0 (0)	T (6)	0 (0)
<u>Glossiphonia complanata</u>	0 (0)	1 (7)	T (3)	0 (0)	0 (0)
<u>Glossiphonia heteroclita</u>	0 (0)	1 (5)	0 (0)	1 (10)	T (2)
<u>Helobdella elongata</u>	T (4)	1 (8)	7 (33)	2 (15)	0 (0)
<u>Helobdella papillata</u>	T (2)	T (2)	0 (0)	0 (0)	0 (0)
<u>Helobdella stagnalis</u>	T (4)	1 (5)	3 (31)	1 (10)	0 (0)
<u>Helobdella triserialis</u>	T (2)	T (2)	0 (0)	1 (4)	T (2)
<u>Hirudinea</u>	T (4)	0 (0)	0 (0)	0 (0)	0 (0)
<u>Piscicolidae</u>	1 (4)	T (3)	T (3)	0 (0)	0 (0)
<u>Piscicola</u>	1 (10)	1 (7)	0 (0)	T (2)	0 (0)
<u>Piscicola milneri</u>	T (2)	T (5)	0 (0)	0 (0)	0 (0)
<u>Placobdella montifera</u>	0 (0)	0 (0)	1 (8)	0 (0)	0 (0)
<u>Placobdella papillifera</u>	T (2)	0 (0)	0 (0)	0 (0)	0 (0)

^{a/} T = trace (< 0.5/m²).

In Lake St. Clair in 1983, Helobdella elongata was the most frequently collected (44%) and densest (46/m²) of the leeches. Declines in abundance and percent occurrence about equaled increases between 1983 and 1984 for all taxa and locations (Appendix C). Because of the low density of individual species, the group was analyzed in detail as a class.

We identified 36 taxa of Cladocera and Copepoda (Appendix C). Inasmuch as most specimens were too small to be retained by our sieve, their densities reflect their presence rather than their true abundance. Furthermore, many of the taxa represented in our samples are planktonic and were probably entrapped in the Ponar as it descended through the water column. This group includes Diaphanosoma, Holopedium, Leptodora, all Daphnia species, Bosmina, Polyphemus, Limnocalanus, Epischura, Diaptomus, Cyclops, and Mesocyclops. True benthic cladocerans and cyclopoids include Eurycercus, Camptocercus, Alona, Sida, Ilyocryptus, Macrocyclus, Eucyclops, Paracyclops, and the Harpacticoida. Daphnia, Diaptomus, and Bosmina were the most common planktonic taxa and Harpacticoida, Ilyocryptus, Sida, and Macrocyclus the most common benthic taxa.

Other crustaceans common in the system included Ostracoda, Gammarus, Hyalella, Asellus, and Lirceus. Although rare, crayfish and Pontoporeia were taken most frequently in the St. Clair River. Densities of Asellus, and Lirceus are combined and analyzed as Isopoda in the next section.

The terrestrial insects collected with the Ponar included both those that are strictly terrestrial and those that have aquatic early-life stages. They occurred in over 20% of the samples at each location and year and were most common in the St. Clair River. Average densities never exceeded 12/m². Densities of most were higher in 1984 than in 1983.

Chironomids were the most common and abundant aquatic insects collected in SCDRS (Table 2). Some genera were collected only as adults and others only as larvae. Seven genera were collected at all five locations (Ablabesmyia, Chironomus, Coelotanypus, Cryptochironomus, Parakiefferiella, Polypedilum, and Procladius); three in only the St. Clair River (Chernoskia, Cladotanytarsus, and Paratanytarsus); and four in only the Detroit River (Psectrocladius, Paratricocladius, Lauterborniella, and Acricotopus).

Other Diptera identified from the system included the families Ceratopogonidae, Empididae, Tipulidae, and Psychodidae and the genus Chaoborus (Appendix C). Ceratopogonids were collected at all locations and in both years; densities were highest (> 14/m²) in Lake St. Clair and the Detroit River, and were higher in 1984 than in 1983 at most locations. Empidids were common (20/m²) in the upper St. Clair River, not collected in Lake St. Clair, and scarce (< 7/m²) elsewhere. Densities were similar in the two years. Psychodids were occasionally collected in both rivers; tipulids and Chaoborus were rare.

Among mayflies, eight genera were collected as nymphs, and three--Cloen,

Table 2. Distribution of genera of Chironomidae and estimated number of species per genus in SCDRS in 1983-84^{a/}.

Genus	No. of species in genus	Locality				
		St. Clair River		Lake	Detroit River	
		Upper	Lower	St. Clair	Upper	Lower
<u>Ablabesmyia</u>	6	-	-	-	-	A
<u>Acricotopus</u>	1	A	A	-	-	-
<u>Axarus</u>	1	A,L	A,L	L	A,L	A
<u>Chironomus</u>	8	A,L	A,L	L	A,L	A
<u>Chernovskia</u>	1	A,L	-	-	-	-
<u>Cladopelma</u>	1	-	-	-	A	-
<u>Cladotanytarsus</u>	2	A,L	A,L	-	A,L	A
<u>Clinotanytus</u>	1	-	-	-	A	-
<u>Coelotanytus</u>	2	L	L	L	A,L	A,L
<u>Conchapelopia</u>	1	A,L	L	L	-	-
<u>Corynoneura</u>	3	L	-	-	A	A
<u>Cricotopus</u>	11	A,L	A,L	-	A,L	A,L
<u>Cryptocladopelma</u>	2	A	A	-	-	-
<u>Cryptochironomus</u>	6	A,L	A,L	L	A,L	A,L
<u>Cryptotendipes</u>	2	A	-	-	A	A
<u>Demicryptochironomus</u>	1	A	A	-	A	-
<u>Dicrotendipes</u>	3	A,L	A	-	A,L	A,L
<u>Einfeldia</u>	1	A	-	-	-	-
<u>Epicocladus</u>	1	L	A,L	L	L	-
<u>Eukiefferiella</u>	1	-	A	-	A	-
<u>Glyptotendipes</u>	2	A	-	-	-	-
<u>Harnischia</u>	1	A	A	-	L	A
<u>Heterotrissocladius</u>	1	-	-	L	-	-
<u>Hydrobaenus</u>	1	L	A	L	-	-
<u>Labrundinia</u>	1	-	A	-	A	-
<u>Larsia</u>	1	-	A	-	-	-
<u>Lauterborniella</u>	1	-	-	-	A	-
<u>Limnophyes</u>	2	A	A	-	-	A
<u>Lopescladius</u>	1	L	-	-	-	L
<u>Mesosmittia</u>	1	A	-	-	A	-
<u>Micropsectra</u>	3	A	-	-	L	A
<u>Microtendipes</u>	1	-	A	-	-	-
<u>Monodiamesa</u>	1	L	L	-	L	-
<u>Nanocladius</u>	4	A,L	A,L	-	A,L	A,L
<u>Nitthauma</u>	1	-	-	-	L	-
<u>Orthocladius</u>	4	A,L	A,L	-	A	-
<u>Parachironomus</u>	6	A	A	-	A	A
<u>Parakiefferiella</u>	1	A,L	A	L	A,L	-
<u>Paralauterborniella</u>	1	A	A	-	A	A
<u>Paratanytarsus</u>	2	A	A	-	-	-
<u>Paratendipes</u>	1	-	-	-	L	-
<u>Paratrachocladius</u>	1	-	-	-	-	A
<u>Pentaneura</u>	1	A,L	A	-	-	A
<u>Phaenopsectra</u>	2	A	A	-	-	-
<u>Polypedilum</u>	7	A,L	A,L	L	A,L	A,L
<u>Potthastia</u>	1	L	L	L	L	-
<u>Procladius</u>	2	A,L	A,L	L	A,L	A,L
<u>Pseudochironomus</u>	3	A,L	L	L	A,L	-
<u>Psectrocladius</u>	1	-	-	-	-	A
<u>Pseudosmittia</u>	1	-	A	-	-	-
<u>Rheotanytarsus</u>	3	A,L	A,L	-	A,L	A,L
<u>Robackia</u>	1	L	-	-	-	-
<u>Smittia</u>	1	-	A	-	A	-
<u>Stempellina</u>	1	A,L	-	-	-	-
<u>Stictochironomus</u>	1	A	-	-	A	-
<u>Tanytus</u>	1	A	-	-	A	-
<u>Tanytarsus</u>	5	A,L	A,L	-	A,L	A
<u>Thienemannimyia</u>	1	A	-	-	-	-
<u>Tribelos</u>	1	A	-	-	A	-
<u>Xenochironomus</u>	1	-	-	L	-	-

^{a/} A = adults; L = larvae.

Ephemera and Stenacron--only as adults (Table 3). Each genus in which species identification was feasible was represented by one species. In the genera Caenis and Tricorythodes, species identification was not feasible. Nymphs of Hexagenia and Caenis occurred at all locations and years, and average abundance sometimes exceeded 300/m². The abundance of Ephemerella, Baetisca, and Stenonema averaged 0-46/m²; these three taxa were collected at all locations with one exception--Ephemerella was not collected in the lower Detroit River. Ephemerella and Stenonema were most abundant in the St. Clair River, and densities of Ephemerella were markedly lower in 1984 than in 1983, whereas the density of Stenonema was higher in 1983 (Appendix C). Baetisca nymphs were most common in the upper Detroit River and were more abundant in 1984 than in 1983. Average densities of Tricorythodes, Brachycercus, and Baetis were usually less than 1/m².

Coleoptera were represented by two families, a few of which were collected only in the St. Clair River. Dubiraphia (Elmidae) was the most abundant genus. Brychius (Haliplidae) was represented by only two specimens.

Lepidoptera larvae were usually identified only to order, but several individuals of the family Pyralidae were identified. Larvae were collected only at river transects, and average densities never exceeded 5/m² (Appendix C).

Trichoptera of 20 genera were collected as larvae and an additional 8 genera were collected only as adults; one additional taxon, Helicopsyche was recorded as present only by the collection of its unique case (Table 4). Cheumatopsyche and Hydropsyche were the most commonly collected caddisflies in the two rivers and Oecetis was the most abundant caddisfly in Lake St. Clair. Other genera with average densities greater than 13/m² were Brachycentrus and Protoptila, whose distribution was almost exclusively in the St. Clair River, and Polycentropus and Mystacides whose densities were highest in the St. Clair River. Phyloctenopus was limited almost exclusively to the upper Detroit River. Of the rarer genera, Micrasema, Phryganea, and Pycnopsyche were collected only in the St. Clair River and Hydroptila, Macrostemum, and Potamyia only in the Detroit River.

Corixidae and Odonata, which are typically found in quiet backwater regions of large rivers, were rarely collected in SCDRS. Damselfly naiads were found only in the lower St. Clair and Detroit rivers (Appendix C). Adult damselflies of the genera Enallagma, Ischnura, and Lestes were collected in both rivers (Table 5); a cursory identification of naiads indicated that most belonged of the genus Enallagma. Dragon fly naiads of the genera Gomphus and Stylurus were collected, along with adults of the genera Anax and Tramea.

Plecoptera were rare, and limited to samples from the St. Clair River (Appendix C). Two distinct taxa were identified as nymphs--specimens in the family Perlodidae and in the genus Isogenoides. Adults of Perlesta were also collected adjacent to the St. Clair River.

Acarina were collected at all locations and in both years. A few tardigrades were collected in both rivers; densities were highest in the lower Detroit River.

Table 3. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different genera of Ephemeroptera in Ponar grab samples from SCDRS in 1983-84.^{a/}

Genus	Locality and number of samples				
	St. Clair River		Lake St. Clair (n = 108)	Detroit River	
	Upper (n = 180)	Lower (n = 180)		Upper (n = 144)	Lower (n = 144)
<u>Baetis</u>	T (6)	A	0 (0)	T (2)	A
<u>Baetisca</u>	5 (17)	6 (15)	T (3)	32 (54)	6 (31)
<u>Brachycercus</u>	0 (0)	0 (0)	0 (0)	T (4)	0 (0)
<u>Caenis</u>	96 (50)	349 (87)	1 (14)	29 (38)	14 (21)
<u>Cloeon</u>	0.0	0.0	0.0	A	0.0
<u>Ephemera</u>	0.0	0.0	0.0	A	0.0
<u>Ephemerella</u>	32 (31)	11 (23)	T (3)	1 (6)	0 (0)
<u>Hexagenia</u>	224 (54)	670 (83)	1210 (100)	69 (58)	6 (38)
<u>Stenacron</u>	A	A	0.0	A	A
<u>Stenonema</u>	22 (50)	7 (20)	T (3)	1 (4)	1 (6)
<u>Tricorythodes</u>	0 (0)	T (2)	0 (0)	T (2)	1 (8)

^{a/} A = adult; T = trace (< 0.5/m²).

Table 4. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different genera of Trichoptera in Ponar grab samples from SCDRS in 1983-84.^{a/}

Genus	No. of species in genus	Locality and number of samples				
		St. Clair River		Lake St. Clair (n = 108)	Detroit River	
		Upper (n = 180)	Lower (n = 180)		Upper (n = 144)	Lower (n = 144)
<u>Agraylea</u>	1	0 (0)	0 (0)	0 (0)	0 (0)	A
<u>Branchycentrus</u>	1	7 (31)	23 (33)	0 (0)	T (2)	0 (0)
<u>Ceraclea</u>	4	5 (46)	13 (42)	0 (0)	3 (25)	1 (6)
<u>Cheumatopsyche</u>	2	113 (77)	22 (32)	3 (6)	700 (75)	35 (44)
<u>Helicopsyche</u>	1	0 (0)	5 (0)	0 (0)	0 (0)	0 (0)
<u>Hydropsyche</u>	2	108 (85)	22 (33)	0 (0)	208 (56)	33 (48)
<u>Hydroptila</u>	1	T (4)	1 (8)	0 (0)	T (2)	7 (27)
<u>Limnephilus</u>	1	A	0 (0)	0 (0)	0 (0)	0 (0)
<u>Macrostemum</u>	1	0 (0)	0 (0)	0 (0)	0 (0)	T (2)
<u>Micrasema</u>	1	T (2)	1 (5)	0 (0)	0 (0)	0 (0)
<u>Molanna</u>	1	0 (0)	0 (0)	0 (0)	A	0 (0)
<u>Mystacides</u>	1	5 (29)	9 (28)	T (3)	T (2)	0 (0)
<u>Nectopsyche</u>	2	T (6)	2 (15)	0 (0)	T (6)	T (2)
<u>Neotrichia</u>	1	0 (0)	0 (0)	0 (0)	A	0 (0)
<u>Neureclipsis</u>	1	14 (27)	21 (30)	0 (0)	T (4)	31 (31)
<u>Nyctiophylax</u>	1	0 (0)	A	0 (0)	0 (0)	0 (0)
<u>Ochrotrichia</u>	1	0 (0)	0 (0)	0 (0)	A	0 (0)
<u>Oecetis</u>	2	13 (33)	39 (62)	41 (88)	14 (33)	3 (10)
<u>Orthotrichia</u>	1	0 (0)	T (3)	0 (0)	T (2)	1 (8)
<u>Oxyethira</u>	1	A	0 (0)	0 (0)	0 (0)	A
<u>Phylocentropus</u>	1	T (2)	0 (0)	0 (0)	8 (19)	0 (0)
<u>Phryganea</u>	1	T (2)	0 (0)	0 (0)	0 (0)	0 (0)
<u>Polycentropus</u>	2	T (6)	15 (32)	0 (0)	T (4)	6 (21)
<u>Potamyia</u>	1	0 (0)	0 (0)	0 (0)	0 (0)	T (2)
<u>Protophila</u>	1	17 (19)	0 (0)	0 (0)	T (4)	A
<u>Psychomyia</u>	1	0 (0)	0 (0)	0 (0)	0 (0)	A
<u>Pycnopsyche</u>	1	0 (0)	T (3)	0 (0)	0 (0)	0 (0)
<u>Setodes</u>	1	T (8)	4 (23)	0 (0)	T (4)	0 (0)
<u>Triaenodes</u>	2	2 (10)	3 (28)	0 (0)	T (4)	T (6)

^{a/} A = adult; T = trace (< 0.5/m²); S = shell only.

Table 5. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of Odonata in Ponar grab samples from the SCDRS in 1983-84.^{a/}

Taxon	No. of species in taxon	Locality and number of samples				
		St. Clair River		Lake	Detroit River	
		Upper (n = 180)	Lower (n = 180)	St. Clair (n = 108)	Upper (n = 144)	Lower (n = 144)
<u>Anax</u>	1	A	0 (0)	0 (0)	0 (0)	A
Coenagrionidae		1 (5)	1 (3)	0 (0)	0 (0)	4 (7)
<u>Enallagma</u>	5	A	0 (0)	0 (0)	A	A
<u>Gomphus</u>	1	A	T (1)	0 (0)	0 (0)	T (1)
<u>Ischnura</u>	1	A	0 (0)	0 (0)	A	A
<u>Lestes</u>	1	0 (0)	0 (0)	0 (0)	0 (0)	A
<u>Stylurus</u>	1	T (1)	0 (0)	0 (0)	0 (0)	0 (0)
<u>Tramea</u>	1	0 (0)	0 (0)	0 (0)	0 (0)	A

^{a/} A = adult; T = trace (< 0.5/m²).

Gastropods were abundant and diverse in SCDRS. We identified 13 taxa and recorded average densities as high as 578/m² (Table 6). Four of the genera--Amnicola, Elimia, Gyraulus, and Physa--were common throughout SCDRS. Of the other taxa, Valvata was common in the upper St. Clair River and Ferrisia in the lower Detroit River, whereas the average densities of all other species were less than 10/m².

The pelecypods were also diverse in SCDRS, but only fingernail clams were abundant in our collections (Table 7). A standard Ponar dredge is not large enough to effectively sample unionids, whose densities rarely exceed 1/m² and whose distribution is often clumped. Pisidium was the more common taxon (380/m²) within the Sphaeriidae and occurred more frequently at all locations than Sphaerium (26/m²), which was most common in Lake St. Clair and the upper Detroit River.

In addition to macrozoobenthos, four species of fish, some fish remains, and fish eggs were collected with the Ponar grab mainly from the upper St. Clair River (Appendix C). The fish densities represent 1 specimen per grab and estimated densities of eggs (rainbow smelt) averaged as high as 46/m². Egg densities were substantially lower in 1984 than in 1983, but percent occurrence remained stable.

Major Taxa and Their Distribution

An analysis of variance was done on 24 taxonomic groups (e.g. Hexagenia, Oligochaeta) that were chosen to include one to several representative taxa from the various classes of invertebrates found in SCDRS. The ANOVA table associated with each group is in Appendix H. The main effect means (year, month, transect, station) are given in Tables 8-19. Interaction means (e.g., transect x year) for two combinations (transect x station, and transect x year and month) are plotted in Appendix D for each group. These two combinations were chosen because they contained all four effects, the plots were not too complex, and they were of geographic and biological interest. Since many of the interaction terms were significant (Appendix H) the differences in main effect means in Tables 8-19 must be interpreted in light of plots in Appendix D. For example, there is a significant difference in Hexagenia between years (Table 15) but it does not hold consistently over all transects (Figs. 46-47 of Appendix D).

Densities of most taxa were significantly higher in 1983 than in 1984 or showed no difference between years; were significantly higher in October than in May and at the off-channel than at the near-channel or channel station; and were higher in the St. Clair River than elsewhere in SCDRS (Tables 8-19). These results are summarized in Table 20. Of particular interest are the taxa with significantly higher populations in 1983 than in 1984. If the low densities occurred mainly in spring 1984 in the St. Clair River and no recovery occurred by fall 1984, we might postulate that some long-term damage had been caused by the ice jam in May 1984. The densities of taxa listed under 1983 in Table 20, except Manayunkia, were lower in spring in 1984 than in 1983. However,

Table 6. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different taxa of Gastropods in Ponar grab samples from SCDRS in 1983-84.^{a/}

Taxon	Locality and number of samples				
	St. Clair River		Lake St. Clair (n = 108)	Detroit River	
	Upper (n = 180)	Lower (n = 180)		Upper (n = 144)	Lower (n = 144)
<u>Amnicola</u>	578 (75)	548 (90)	33 (69)	203 (90)	93 (77)
<u>Bithynia</u>	0 (0)	0 (0)	T (6)	1 (8)	T (2)
<u>Campeloma</u>	T (2)	0 (0)	T (3)	T (2)	T (4)
<u>Elimia livescens</u>	271 (69)	125 (77)	7 (47)	171 (79)	65 (71)
<u>Ferrisia</u>	37 (23)	0 (0)	0 (0)	3 (17)	182 (58)
<u>Gyraulus</u>	51 (42)	124 (70)	28 (50)	52 (35)	28 (31)
<u>Helisoma</u>	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
<u>Lymnaea</u>	7 (31)	T (2)	0 (0)	1 (2)	0 (0)
<u>Physa</u>	122 (67)	110 (80)	T (3)	25 (38)	40 (54)
<u>Pleurocera acuta</u>	3 (8)	T (2)	2 (14)	10 (42)	T (4)
<u>Somatogyrus subglobosus</u>	0 (0)	T (2)	T (3)	0 (0)	0 (0)
<u>Valvata sincera</u>	2 (15)	1 (6)	2 (3)	T (2)	1 (6)
<u>Valvata tricarinata</u>	179 (31)	12 (44)	9 (42)	17 (6)	T (6)

^{a/} T = trace (< 0.5/m²)

Table 7. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different taxa of Pelecypoda in Ponar grab samples from SCDRS in 1983-84.^{a/}

Taxon	Locality and number of samples				
	St. Clair River		Lake	Detroit River	
	Upper (n = 180)	Lower (n = 180)	St. Clair (n = 108)	Upper (n = 144)	Lower (n = 144)
<u>Anodonta grandis</u>	0 (0)	0 (0)	T (3)	0 (0)	0 (0)
<u>Elliptio dilatatus</u>	0 (0)	0 (0)	0 (0)	1 (8)	0 (0)
<u>Lampsilis</u> sp.	0 (0)	T (2)	T (3)	1 (6)	0 (0)
<u>Lampsilis radiata</u> <u>siliquoidea</u>	0 (0)	0 (0)	1 (8)	T (6)	T (2)
<u>Lampsilis ventricosa</u>	0 (0)	0 (0)	0 (0)	T (4)	0 (0)
<u>Leptodea fragilis</u>	0 (0)	0 (0)	T (3)	T (2)	0 (0)
<u>Pisidium</u> sp.	259 (77)	300 (90)	671 (100)	368 (98)	285 (75)
<u>Pleurobema cordatum</u>	0 (0)	0 (0)	0 (0)	T (4)	0 (0)
<u>Proptera alata</u>	0 (0)	0 (0)	T (3)	T (2)	0 (0)
<u>Ptychobranchus</u> <u>fasciolaria</u>	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
<u>Sphaerium</u> sp.	7 (21)	30 (47)	30 (89)	62 (75)	1 (6)
<u>Truncilla</u> sp.	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
<u>Truncilla donaciformis</u>	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
<u>Truncilla truncata</u>	0 (0)	0 (0)	0 (0)	1 (4)	0 (0)
Unionidae (juveniles)	T (4)	1 (12)	1 (14)	6 (44)	0 (0)

^{a/} T = trace (< 0.5/m²).

Table 9. Mean density (No./m²) of Nemertinea and Nematoda by year, month, station, and transect in SCORS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon		Year	Month		Station					
					268		243		198	
					Channel		Near-channel		Off-channel	
			</							

Table 10. Mean density (No./m²) of Hirudinea and Oligochaeta by year, month, station, and transect in SCORS. Adjacent values that are jointly underlined are not significantly different ($P < 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station			
	1983		1984		1984		1984	
Mirudinea	8	6	8	6	14	4	4	4
	1983	1984	October	May	Off-channel	Channel	Near-channel	
	</							

Taxon	Year		Month						Station												
<u>Gammarus</u>	512 1983	452 1984	741 October	223 May	838 Off-channel	423 Near-channel	185 Channel														
	<u>Transect</u>																				
1656	1417	1054	1182	1267	720	510	340	548	470	298	206	153	106	69	37	23	20	20	14	11	
6	7	8	5	4	9	12	13	10	16	11	2	20	15	18	17	19	21	14	1	3	
	<u>Transect</u>																				
	105 1983	167 1984	85 October	87 May	164 Off-channel	51 Near-channel	43 Channel														
<u>Hyalinella</u>																					
	<u>Transect</u>																				
445	515	243	145	78	83	79	68	4	30	34	16	9	8	6	2	.6	.6	0	0	0	
16	9	8	6	2	7	4	20	10	5	18	17	14	3	21	11	1	13	12	19	15	

Table 14. Mean density (No./m²) of Chironomidae and Oecetis by year, month, station, and transect in SCDS. Adjacent values that are jointly underlined are not significantly different ($P < 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year	Month	Station
<u>Chironomidae</u>	2174 1983	1322 1984	2137 May
	2593	2514	2566
	3445	2876	1745
	3439	2514	751
	4867	3445	1018
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
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	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
	42	29	6
	46	16	15
	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
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<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20
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	118	9	8
<u>Transect</u>			
<u>Chironomidae</u>	5261	4867	3439
	6	16	12
	8	3	17
	13	12	1018
	46	2514	751
<u>Oecetis</u>	26 1983	17 1984	23 May
	39	55	20

Table 16. Mean density (No./m²) of Cheumatopsyche and Hydropsyche by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

[illegible]

Taxon	Year	Month	Station																	
Acarina	46 1984	38 1983	40 May	43 October	55 Off-channel	37 Near-channel	33 Channel													
136	115	106	78	88	60	39	37	34	27	18	14	14	11	10	8	4	2			
2	4	20	5	19	18	16	17	10	14	8	7	21	9	11	6	12	13	3	15	1
<u>Transect</u>																				
Sphaeriidae	372 1983	365 1984	403 October	334 May	438 Off-channel	350 Near-channel	316 Channel													
983	584	537	519	473	532	440	460	359	371	345	360	349	278	320	218	142	127	239	57	43
11	12	13	14	15	4	7	8	17	16	9	21	5	10	19	18	2	6	20	1	3
<u>Transect</u>																				

Table 18. Mean density (No./m²) of Physa and Gyraulus by year, month, station, and transect in SCORS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station															
<u>Physa</u>	65	58	89	35	115	52	18													
	1984	1983	October	May	Off-channel	Near-channel	Channel													
	<u>Transect</u>																			
	280	183	141	115	112	96	90	75	61	52	36	14	16	15	8	2	1	6	0	0
2	8	6	4	7	18	5	16	9	10	20	19	21	14	17	3	15	12	1	13	11
<hr/>																				
<u>Gyraulus</u>	68	49	81	36	128	33	13													
	1983	1984	October	May	Off-channel	Near-channel	Channel													
	<u>Transect</u>																			
	236	162	158	104	140	76	62	69	42	35	38	32	24	10	11	9	7	5	5	1	0
6	16	4	7	8	10	9	18	12	13	5	20	15	17	14	2	11	19	21	3	1
<hr/>																				

[illegible]

Table 20. Summary of ANOVA results in tables 8-19 of mean density on 24 abundant taxa collected in the SCDRS in 1983 and 1984. Placement indicates significantly higher ($P \leq 0.05$) abundance at a particular time or location. Taxa placement in station and location categories were based on overall ranking regardless of significance; in the case of location, the cutoff was arbitrary.

YEAR			MONTH		
1983 ^{1/}	1984 ^{1/}	Nonsignificant	May ^{1/}	October ^{1/}	Nonsignificant
<u>Amnicola</u>	<u>Cheumatopsyche</u>	<u>Acarina</u>	<u>Acarina</u>	<u>Amnicola</u>	<u>Oecetis</u>
<u>Chironomidae</u>	<u>Hexagenia</u>	<u>Caenis</u>	<u>Chironomidae</u>	<u>Caenis</u>	
<u>Gammarus</u>	<u>Hydra</u>	<u>Elimia</u>	<u>Harpacticoida</u>	<u>Cheumatopsyche</u>	
<u>Harpacticoida</u>	<u>Hydropsyche</u>	<u>Gyraulus</u>	<u>Isopoda</u>	<u>Elimia</u>	
<u>Hyalella</u>	<u>Ostracoda</u>	<u>Hirudinea</u>	<u>Nematoda</u>	<u>Gammarus</u>	
<u>Isopoda</u>		<u>Nemertinea</u>	<u>Oligochaeta</u>	<u>Gyraulus</u>	
<u>Manayunkia</u>		<u>Oligochaeta</u>	<u>Ostracoda</u>	<u>Hexagenia</u>	
<u>Nematoda</u>		<u>Physa</u>		<u>Hirudinea</u>	
<u>Oecetis</u>		<u>Sphaeriidae</u>		<u>Hyalella</u>	
<u>Turbellaria</u>				<u>Hydra</u>	
				<u>Hydropsyche</u>	
				<u>Manayunkia</u>	
				<u>Nemertinea</u>	
				<u>Physa</u>	
				<u>Sphaeriidae</u>	
				<u>Turbellaria</u>	

STATION			LOCATION		
Off-channel	Near-channel	Channel	St. Clair R. (Transects 1-10)	Lake St. Clair (Transects 11-13)	Detroit River (Transects 14-21)
<u>Acarina</u>	<u>Cheumatopsyche</u>	<u>Cheumatopsyche</u>	<u>Acarina</u>	<u>Hexagenia</u>	<u>Acarina</u>
<u>Amnicola</u>	<u>Elimia</u>	<u>Hexagenia</u>	<u>Amnicola</u>	<u>Hirudinea</u>	<u>Cheumatopsyche</u>
<u>Caenis</u>	<u>Hexagenia</u>	<u>Nemertinea</u>	<u>Caenis</u>	<u>Nematoda</u>	<u>Elimia</u>
<u>Chironomidae</u>	<u>Hydra</u>		<u>Chironomidae</u>	<u>Oecetis</u>	<u>Harpacticoida</u>
<u>Gammarus</u>	<u>Nematoda</u>		<u>Elimia</u>	<u>Sphaeriidae</u>	<u>Hyalella</u>
<u>Gyraulus</u>			<u>Gammarus</u>		<u>Hydropsyche</u>
<u>Harpacticoida</u>			<u>Gyraulus</u>		<u>Manayunkia</u>
<u>Hexagenia</u>			<u>Hirudinea</u>		<u>Nematoda</u>
<u>Hirudinea</u>			<u>Hyalella</u>		<u>Nemertinea</u>
<u>Hyalella</u>			<u>Hydra</u>		<u>Oligochaeta</u>
<u>Hydropsyche</u>			<u>Isopoda</u>		<u>Ostracoda</u>
<u>Isopoda</u>			<u>Oecetis</u>		<u>Turbellaria</u>
<u>Manayunkia</u>			<u>Oligochaeta</u>		
<u>Oecetis</u>			<u>Physa</u>		
<u>Oligochaeta</u>			<u>Turbellaria</u>		
<u>Ostracoda</u>					
<u>Physa</u>					
<u>Sphaeriidae</u>					
<u>Turbellaria</u>					

^{1/} Significantly greater density.

this lower density in spring occurred only in the St. Clair River, and was most obvious in the delta region (transects VII-X). Densities of Nematoda, Isopoda, Gammarus, Hyaella, Chironomidae, and Oecetis in the affected area had recovered by fall 1984 to levels equal to or exceeding those in fall 1983, though densities of Turbellaria, Harpacticoida, and Amnicola were still low in fall 1984 (Figs. 5, 23, 35, and 68 of Appendix D).

Variability in yearly trends of mean density in relation to month can be illustrated by Hydra population densities. Numbers in spring were consistently higher in 1983 than in 1984 (Fig. 1 of Appendix D), but the reverse was true in the fall (Fig. 2 in Appendix D). This difference also occurred in Oligochaeta, Chironomidae, Caenis, Acarina, and Sphaeriidae. Variation in yearly trends by transect and month are shown in Hexagenia densities in Figs. 46 and 47 of Appendix D. Other taxa were more consistent, although all vary somewhat over the 21 transects and two sampling periods.

Densities of most taxa were significantly higher in October than in May (Table 20). The differences in seasonal abundance were fairly consistent over years and transects, because many of the interaction means associated with month were nonsignificant (e.g., Hirudinea, Cheumatopsyche in Appendix H). The exceptions were Hydra, which typically was most common in October, though its density was rather high in the Detroit River in May 1984 (Fig. 1 of Appendix D). Densities of Ostracoda were high in the St. Clair River in October, whereas they are typically highest in May (Fig. 25 of Appendix D). Similarly, departures from seasonal abundance trends resulting from unusually high densities in a particular year or area (transect) occurred also in Hexagenia, Gyraulus, and Elimia.

Densities of most taxa were significantly higher at the off-channel station than at either the near-channel or channel stations (Table 20). Densities of Acarina, Hydropsyche, Cheumatopsyche, and Hexagenia were not significantly different between at least two stations (Tables 15, 16, 17); consequently these taxa were listed at stations where their densities were highest. In addition, the abundance of several taxa at a particular station (depth) was not consistent over all transects. The depth distributions of Hirudinea, Oligochaeta, Chironomidae, Sphaeriidae, and Amnicola differed in lake and riverine situations, and those of Manayunkia, Acarina, and Elimia differed between the lower Detroit River and the rest of the system. Contaminant problems may override depth distribution in this area. These and other minor differences in distribution among stations probably reflect a preference for a sediment type.

Most taxa were most abundant in the St. Clair River (Table 20). Listing a particular taxon in a particular location was somewhat subjective because of ranking between locations overlapped considerably. For example, densities of Hydra were consistently high in the St. Clair River, whereas those of Turbellaria were equally high in the St. Clair and Detroit rivers (Table 8). If distribution differences were not clear cut, a particular taxon was listed in more than one location. Taxa most abundant in the St. Clair River were

mostly insects and snails. The number of taxa whose highest densities were in Lake St. Clair were few, and were characteristic of lotic situations. The Detroit River was dominated by lower invertebrate taxa (worms) and net-spinning caddisflies.

Biomass

Mean biomass ranged from 0.03 to 4.84 g/m² over the 21 transects (Table 21). Biomass was higher in 1984 than in 1983 along about half the transects; there were no statistically significant differences between years (Table 22 and Appendix H). Biomass was 25% lower in May, but 60% higher in October, in 1984 than in 1983. This reversal resulted in no statistically significant differences between May and October (Table 22). Biomass in May was lower in 1984 than in 1983 at most St. Clair River transects, but the opposite was true in the Detroit River. However, most biomass values for October were higher in 1984 than in 1983, over all transects (Figs. 73-74 in Appendix D). Differences between stations were significant, and relationships did not vary by month or year and were fairly consistent over transects (Fig. 75 of Appendix D). Biomass was highest in the Russell Island area and Belle Isle (Table 21) and lowest at transect I in Lake Huron.

Clams, crayfish, and fish remains were rarely collected but contributed considerably to biomass estimates. Because of the great variability they introduced, they were not included in the ANOVA (Table 22 and Appendix H). Clams were most common in Lake St. Clair and the Detroit River--particularly at transect XVI, where biomass estimates were as high as 2.6 g/m².

Density and Diversity

Average total densities of macrozoobenthos ranged from 976 to 96,684/m² over the 21 transects in the two years (Table 21). Total densities were higher along about half the transects, and lower along the other half, in 1984 than in 1983. Densities were not necessarily positively correlated with biomass calculated at the same stations (Table 21). Densities were highest at transects XVIII (due mainly to oligochaetes) and VII (which had a diverse community--an average of 36 taxa per sampling period).

The average number of taxa at each transect ranged from 9 to 38 (Table 21). Diversity was consistently higher in 1983 than in 1984 in the St. Clair River but did not differ between years in the Detroit River. On the average, there were four fewer taxa in 1984 than in 1983 in the St. Clair River. The number of taxa was lowest (9-13) in the sandy substrates of transect I (Lake Huron) and high (> 30) at II-VIII and at XVII (Belle Isle). The number of taxa per sample averaged 22 in the lower Detroit River.

Physical Characteristics of the River

The physical environment varied among transects (see Appendix G for summary). Current velocities and substrates differed among segments of SCDRS: upper St.

Table 21. Mean total density, biomass (ash-free dry weight) and average number of taxa (diversity) of macrozoobenthos collected in SCDRS, May and October, 1983-1984.

Transect	Density (no./m ²)		Biomass (g/m ²)		Diversity (no. of taxa)	
	1983	1984	1983	1984	1983	1984
I	2,504	976	0.24	0.03	13	9
II	24,622	87,430	1.16	2.27	38	37
III	7,837	2,555	0.22	0.12	22	18
IV	15,190	34,659	0.79	1.78	32	32
V	14,361	87,481	1.33	2.47	32	29
VI	34,814	47,042	2.47	2.13	38	32
VII	31,533	90,107	2.82	3.31	36	32
VIII	43,294	23,176	1.56	0.91	34	31
IX	25,470	6,260	1.02	0.21	34	23
X	13,103	10,113	0.55	0.41	26	23
XI	13,956	15,391	1.68	1.08	24	21
XII	8,090	7,474	1.25	1.67	22	22
XIII	7,184	5,514	0.91	1.85	22	22
XIV	9,054	113	0.55	1.75	23	22
XV	11,040	8,020	0.92	1.43	21	23
XVI	20,325	17,802	4.20	4.84	34	32
XVII	22,545	16,313	1.18	0.82	28	30
XVIII	98,684	63,073	1.35	1.37	25	21
XIX	13,661	15,938	0.42	0.89	20	22
XX	11,154	8,983	0.34	0.34	22	25
XXI	11,277	14,608	0.92	0.31	21	22
Mean	20,938	26,811	1.23	1.43	27	25

Table 22. Ash-free dry weight mean biomass (g/m²) of macrozoobenthos by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of untransformed data. Large clams, crayfish, and fish remains are not included in the analysis.

Year			Month		Stations												
Biomass			1.09	1.00	1.07	1.03	1.43	1.00	0.71								
			1984	1983	May	October	Off-channel	Near-channel	Channel								
			<u>Transects</u>														
													</				

Clair River, sometimes >2 ft/s, mostly gravel; lower St. Clair River, never >2 ft/s, predominantly sand and silt; Lake St. Clair, rarely >0.6 ft/s, cohesive clay and silt; upper Detroit River and portions of the lower river, usually <1 ft/s, unconsolidated clay and silt; and other transects in the lower Detroit River (XX-XXI), with >1 ft/s and mainly gravel and cobble. Sampling depth ranged from 4 to 25 ft in the rivers, but varied little in Lake St. Clair, averaging 22 ft.

Water temperature varied between locations, seasons, and years during the study. Contemporaneous differences of up to 7°F occurred routinely between Port Huron and the lower Detroit River. These differences were greatest in spring and smallest in fall, and averaged about 4°F for the year. Temperatures ranged from 39° to 46°F in early May and from 57° to 59°F in October. Daily temperatures for both years were available from the water plants operated by the City of Port Huron (in the river adjacent to the city) and Detroit (Detroit River at Belle Isle). The average monthly temperatures are plotted in Fig. 5. Both rivers reached maximum temperature in August; temperatures were consistently lower in 1984 than in 1983--particularly in the St. Clair River in March, April, and May, where low temperatures were presumably caused by the large ice jam previously described. Differences between surface and bottom temperatures were always less than 2°F.

Relationships between Macrozoobenthos and Physical Environment

The relation between depth, velocity, bottom type, and temperature and the abundance of 24 taxa was limited mainly to significant correlations with depth and velocity (Table 23). Increasing depth was correlated with increasing current velocity and coarser or firmer substrates. However, it was difficult to determine which of these physical factors most influenced the abundance of macrozoobenthos. The abundance of all of the taxa listed in Table 23 except Hydropsyche and Cheumatopsyche were negatively correlated ($P < 0.05$) with depth and velocity. Most of the taxa listed in Table 23 were significantly denser at the off-channel stations than at others (Table 20). Turbellaria, Hirudinea, Oligochaeta, Gammarus, Hyalella, Chironomidae, Caenis, Physa, Gyraulus, and Amnicola were consistently most abundant in shallow areas with little current. The depth distribution of certain other taxa may have been unique, but the relation was not linear.

Although water velocity was related to bottom type, a linear relation with sediment type was significant for only one taxon--densities of Hydropsyche were highest in coarse sediments. Other significant positive relations were shown by Hydropsyche and Cheumatopsyche (with water velocity) and Physa (with temperature). Few correlations with temperature would be expected because temperature differences both vertically and cross channel were small, and the sampling periods were widely separated.

AQUATIC MACROPHYTES

Distribution of Submersed Plants

We collected 20 taxa of submersed macrophytes with the Ponar grab in the

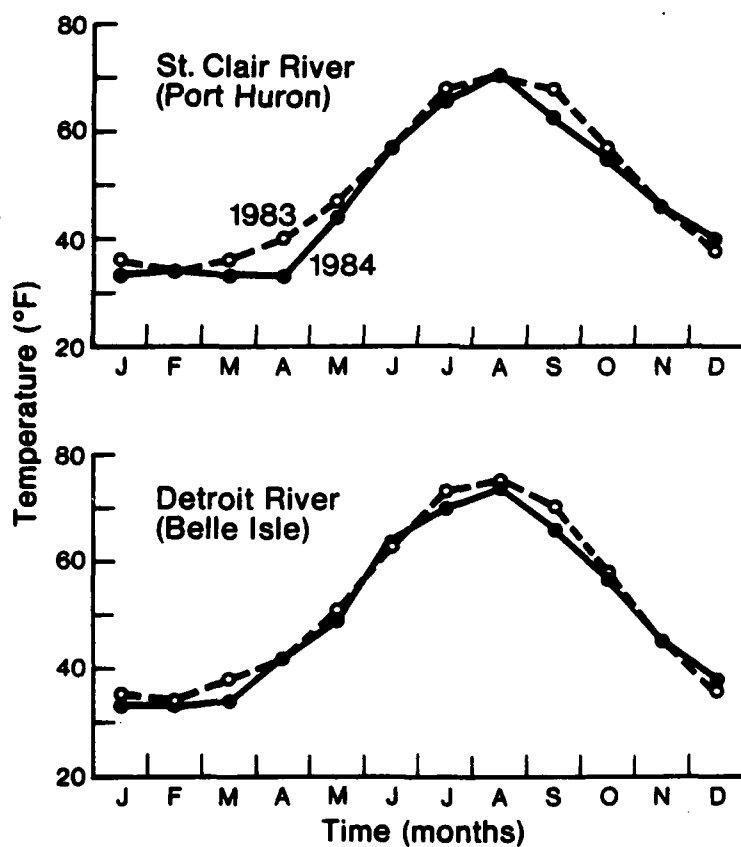


Figure 5. Mean monthly water temperatures (°F) measured in the St. Clair and Detroit rivers at the city of Port Huron water intake (1.5 miles below the Blue Water Bridge) and at the city of Detroit water intake (Belle Isle) in 1983 and 1984.

Table 23. Significant correlation coefficients ($P \leq 0.05$, $n = 756$) for macrozoobenthos density (by taxon) and: water depth, velocity, temperature, and bottom type.

Taxon	Depth	Velocity	Temperature	Bottom type
<u>Turbellaria</u>	-0.253	-0.308	-	-
<u>Hirudinea</u>	-0.255	-0.259	-	-
<u>Oligochaeta</u>	-0.222	-0.329	-	-
<u>Sammarus</u>	-	-0.243	-	-
<u>Hyalella</u>	-	-0.180	-	-
<u>Chironomidae</u>	-0.301	-0.349	-	-
<u>Caenis</u>	-0.261	-0.305	-	-
<u>Hexagenia</u>	-	-0.286	-	-
<u>Cheumatopsyche</u>	-	+0.248	-	-
<u>Hydropsyche</u>	-	+0.243	-	+0.164
<u>Physa</u>	-0.263	-0.265	+0.224	-
<u>Gyraulus</u>	-0.255	-0.230	-	-
<u>Annicola</u>	-0.311	-0.269	-	-

St. Clair and Detroit rivers in 1983 and 1984 (Table 24). The St. Clair River yielded 18 submersed taxa plus 1 emergent species, Sagittaria sp., that was found in the submersed stage; and the Detroit River collections contained 19 taxa including 2 emergent species that were found in their submersed forms. The most common submersed plants in decreasing order of frequency of occurrence, were Chara spp., Potamogeton spp., Vallisneria americana, Potamogeton gramineus, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis. Other taxa occurred in less than 13% of the samples. The most common taxa collected were Chara in the St. Clair River and V. americana in the Detroit River. The frequency of occurrence of Potamogeton spp. was similar in both rivers; P. richardsonii, E. canadensis, and P. gramineus were more common in the St. Clair River and M. spicatum was more common in the Detroit River. Butomus umbellatus and Ranunculus longirostris were collected only in the Detroit River and Zannichellia palustris only in the St. Clair River. Variation in frequency of occurrence of individual taxa between years was 7% or less in both rivers.

The number of plant taxa generally increased from spring to late summer as Najas flexilis, Nitellopsis obtusa, and P. zosteriformis appeared in July-August (Tables 25-27). One taxon, P. crispus, declined in occurrence as the season progressed. Total number of taxa at each location varied from 7 to 14, the largest number occurring in September. The plant collections were only slightly more diverse at Stag Island and Belle Isle (mean of 11 taxa) than at Point Hennepin, where the diversity was lowest (mean of 8 taxa). Percent occurrence of individual taxa during each sampling period varied less than 10% between years, at each location. Only 11 of 228 comparisons (by year, month, and island) showed changes in occurrence of taxa that exceeded 20%. Changes were about equally divided between the St. Clair and Detroit rivers and occurred most frequently in July. Incidence of variation (> 10%) in percent occurrence between years, was highest in Potamogeton spp., P. richardsonii, E. canadensis, and Vallisneria americana.

The diversity of taxa and distribution of plants were unique at each location. At Stag Island, plants were lacking in blocks 1-4 and sparse in block 5 (Figs. 1-3 and 19-21 of Appendix 0). Plants also appeared to be absent in parts of blocks 6-9 and 13, and in shallow areas in blocks 8, 10, and 11. Most plants were located in and near an area with depths up to 20 ft that was centered on grid intersect 17 and along the shipping channel. Chara spp., Potamogeton spp., and P. richardsonii occurred in relatively high concentrations--> 10 g/m² in June, > 20 in July, and > 40 in September--in all blocks below the upstream tip of the island. Chara spp. occurred most often in pure stands, particularly in shallow areas adjacent to Stag Island. Potamogeton richardsonii, Elodea canadensis and P. crispus were the dominant plants composing the dark band around deep water in grids 6-9 and 11-12 (e.g., see Fig. 2 of Appendix 0). Myriophyllum spicatum and Najas flexilis dominated the deeper water in both these areas. Potamogeton gramineus was the dominant taxon in the deeper areas near the shipping channel. Potamogeton spp. was interspersed throughout the communities and was the dominant taxon in the lighter areas near the shipping channel. Diversity was greatest in areas where light and dark patches converged. Six to eight taxa were often found in

Table 24. Percent frequency of occurrence and mean dry weight biomass (g/m^2) of submersed macrophyte taxa collected with a Ponar grab in SCORS in 1983 and 1984. Mean biomass is based only on samples in which the taxa occurred.

Taxa	St. Clair River				Detroit River			
	Occurrence		Mean biomass		Occurrence		Mean biomass	
	1983	1984	1983	1984	1983	1984	1983	1984
<u>Butomus umbellatus</u> ^{a/}	0	0	0	0	0	2	0	27.3
<u>Chara</u> spp.	70	65	85.8	119.8	11	15	30.4	60.8
<u>Elodea canadensis</u>	28	22	44.6	25.5	7	7	78.4	137.0
<u>Heteranthera dubia</u>	^{b/}	0	1.5	0	7	7	58.4	173.9
<u>Myriophyllum exalbescent</u>	T	T	6.0	2.6	0	T	0	3.3
<u>Myriophyllum spicatum</u>	8	7	34.1	41.7	24	17	93.9	104.6
<u>Najas flexilis</u>	3	6	3.3	2.6	3	7	2.3	15.5
<u>Nitella hyalina</u>	3	10	26.1	35.0	9	11	58.6	28.8
<u>Nitellopsis obtusa</u>	1	1	34.0	11.5	9	10	81.7	48.9
<u>Potamogeton crispus</u>	3	3	29.9	17.7	10	13	83.5	69.6
<u>Potamogeton gramineus</u>	46	41	42.8	64.2	4	5	26.1	39.5
<u>Potamogeton</u> spp. ^{c/}	54	53	50.1	33.6	31	28	23.6	17.2
<u>Potamogeton natans</u>	1	0	72.2	0	0	0	0	0
<u>Potamogeton nodosus</u>	1	0	5.0	0	0	1	0	124.7
<u>Potamogeton richardsonii</u>	32	31	50.6	84.1	21	22	73.0	69.6
<u>Potamogeton zosteriformis</u>	2	3	7.3	20.6	2	8	3.0	3.9
<u>Ranunculus longirostris</u>	0	0	0	0	1	0	102.4	0
<u>Sagittaria</u> sp. ^{a/}	T	T	16.2	1.0	0	2	0	4.7
<u>Vallisneria americana</u>	2	5	12.7	6.5	70	67	49.0	41.1
<u>Zannichellia palustris</u>	0	1	0	1.4	0	0	0	0

^{a/} Emergent species collected only in the submersed stage.

^{b/} T = < 1%

^{c/} Narrow-leaf forms.

Table 25. Mean dry weight biomass (g/m²) and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCORS in June 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

Taxon	Year	Stag Island	Fawn Island	Russell Island	Belle Isle	Pt. Hennepin	Stony Island
<u>Chara</u> spp.	1983	24 (67)	28 (82)	51 (85)	45 (38)	27 (20)	4 (3)
	1984	63 (70)	102 (71)	40 (80)	32 (31)	18 (10)	0
<u>Elodea canadensis</u>	1983	49 (33)	6 (4)	58 (22)	1 (5)	0	50 (19)
	1984	18 (50)	0	8 (22)	0	1 (2)	157 (33)
<u>Heteranthera dubia</u>	1983	0	0	0	0	0	15 (17)
	1984	0	0	0	0	0	6 (7)
<u>Myriophyllum spicatum</u>	1983	20 (16)	0	81 (2)	34 (10)	124 (6)	12 (19)
	1984	40 (17)	0	0	24 (18)	0	4 (10)
<u>Nitella hyalina</u>	1983	22 (5)	20 (6)	78 (2)	37 (49)	42 (19)	0
	1984	64 (17)	5 (2)	2 (8)	30 (46)	29 (33)	3 (3)
<u>Potamogeton crispus</u>	1983	40 (10)	1 (2)	0	8 (13)	84 (7)	143 (47)
	1984	18 (8)	4 (4)	0	4 (9)	0	150 (42)
<u>Potamogeton gramineus</u>	1983	14 (22)	19 (46)	14 (33)	22 (15)	0	30 (6)
	1984	10 (22)	7 (47)	5 (33)	2 (12)	0	0
<u>Potamogeton</u> ^{a/} spp.	1983	32 (50)	32 (27)	46 (62)	5 (56)	28 (87)	4 (47)
	1984	19 (57)	4 (40)	14 (53)	2 (50)	20 (65)	2 (30)
<u>Potamogeton richardsonii</u>	1983	14 (12)	32 (20)	32 (17)	11 (23)	2 (2)	44 (11)
	1984	8 (17)	10 (20)	17 (33)	8 (23)	21 (26)	0
<u>Vallisneria spiralis</u>	1983	0	0	0	4 (77)	4 (50)	9 (39)
	1984	0	1 (2)	0	2 (62)	4 (54)	8 (47)

^{a/} Narrow-leaf forms.

Table 26. Mean dry weight biomass (g/m²) and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCORS in July-August 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

Taxon	Year	Stag Island	Fawn Island	Russell Island	Belle Isle	Point Hennepin	Stony Island
<u>Chara</u> spp.	1983	100 (62)	103 (71)	110 (78)	48 (10)	3 (5)	0
	1984	132 (57)	136 (81)	121 (36)	107 (38)	16 (5)	0
<u>Elodea canadensis</u>	1983	25 (42)	7 (16)	59 (33)	1 (3)	0	169 (24)
	1984	57 (45)	0	13 (12)	0	0	171 (21)
<u>Heteranthera dubia</u>	1983	0	0	2 (3)	0	0	51 (24)
	1984	0	0	0	0	0	124 (21)
<u>Myriophyllum spicatum</u>	1983	20 (20)	5 (2)	1 (3)	80 (36)	161 (12)	92 (48)
	1984	41 (20)	0	1 (3)	66 (19)	0	82 (33)
<u>Najas flexilis</u>	1983	0	0	0	2 (10)	1 (2)	0
	1984	0	1 (19)	1 (6)	3 (31)	1 (2)	0
<u>Nitella hyalina</u>	1983	35 (3)	0	0	4 (3)	0	0
	1984	111 (13)	23 (17)	6 (14)	0	5 (10)	0
<u>Nitellopsis obtusa</u>	1983	0	0	0	71 (51)	1 (2)	0
	1984	0	0	0	36 (38)	0	0
<u>Potamogeton crispus</u>	1983	33 (15)	6 (4)	0	12 (10)	0	3 (9)
	1984	28 (8)	0	0	9 (17)	0	40 (27)
<u>Potamogeton gramineus</u>	1983	36 (37)	31 (49)	24 (56)	0	0	32 (3)
	1984	13 (7)	34 (52)	101 (50)	60 (10)	72 (7)	75 (3)
<u>Potamogeton</u> ^{a/} <u>spp.</u>	1983	39 (48)	35 (64)	36 (58)	5 (5)	37 (42)	20 (18)
	1984	41 (43)	30 (45)	29 (67)	5 (14)	29 (49)	40 (24)
<u>Potamogeton richardsonii</u>	1983	31 (32)	53 (62)	36 (36)	72 (38)	86 (48)	49 (12)
	1984	56 (42)	53 (21)	212 (42)	98 (45)	127 (35)	142 (15)
<u>Potamogeton zosteriformis</u>	1983	9 (7)	5 (9)	0	4 (13)	0	1 (3)
	1984	0	41 (12)	0	4 (33)	0	0
<u>Vallisneria spiralis</u>	1983	1 (2)	1 (4)	0	25 (72)	50 (70)	37 (67)
	1984	7 (3)	1 (2)	3 (3)	20 (76)	42 (68)	63 (55)

^{a/} Narrow-leaf forms.

Table 27. Mean dry weight biomass (g/m²) and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCORS in September 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

Taxon	Year	Stag Island	Fawn Island	Russell Island	Bella Isle	Pt. Hennepin	Stony Island
<u>Chara</u> spp.	1983	203 (47)	116 (69)	94 (69)	15 (12)	1 (9)	0
	1984	95 (48)	190 (76)	204 (64)	73 (38)	10 (14)	0
<u>Elodea canadensis</u>	1983	26 (37)	75 (36)	54 (25)	1 (2)	2 (2)	1 (9)
	1984	27 (38)	2 (7)	7 (19)	2 (2)	0	2 (6)
<u>Heteranthera dubia</u>	1983	0	0	0	0	5 (7)	129 (18)
	1984	0	0	0	0	0	231 (39)
<u>Myriophyllum spicatum</u>	1983	69 (23)	2 (2)	1 (6)	72 (34)	125 (7)	145 (45)
	1984	53 (23)	0	8 (3)	91 (26)	101 (11)	225 (36)
<u>Najas flexilis</u>	1983	4 (7)	4 (14)	1 (6)	3 (14)	1 (2)	0
	1984	0	5 (24)	1 (6)	33 (24)	15 (9)	0
<u>Nitella hyalina</u>	1983	25 (7)	23 (2)	6 (3)	167 (14)	0	0
	1984	3 (10)	3 (7)	0	95 (5)	1 (2)	0
<u>Nitellopsis obtusa</u>	1983	4 (7)	0	69 (6)	104 (31)	0	0
	1984	0	12 (5)	0	59 (48)	0	0
<u>Potamogeton crispus</u>	1983	0	0	0	5 (2)	0	6 (3)
	1984	11 (5)	0	0	2 (2)	0	23 (18)
<u>Potamogeton gramineus</u>	1983	47 (38)	88 (64)	65 (69)	28 (10)	0	0
	1984	76 (23)	47 (69)	171 (64)	38 (10)	1 (2)	0
<u>Potamogeton</u> ^{a/} <u>spp.</u>	1983	95 (65)	30 (48)	81 (64)	8 (5)	107 (16)	1 (3)
	1984	53 (48)	12 (45)	74 (81)	14 (12)	3 (2)	34 (6)
<u>Potamogeton richardsonii</u>	1983	96 (38)	51 (55)	78 (14)	98 (43)	114 (12)	0
	1984	42 (43)	69 (33)	234 (25)	30 (33)	50 (21)	0
<u>Potamogeton zosteriformis</u>	1983	15 (2)	1 (2)	0	0	0	0
	1984	14 (8)	1 (2)	1 (3)	7 (2)	0	0
<u>Vallisneria americana</u>	1983	37 (5)	0	8 (11)	56 (95)	78 (84)	135 (76)
	1984	6 (7)	12 (17)	2 (11)	30 (83)	84 (98)	90 (61)

^{a/} Narrow-leaf forms.

these areas (Table 1 of Appendix K). The number of taxa per Ponar grab averaged about 2.6 at Stag Island (Table 28) and tended to increase over the season.

At Fawn Island, submersed macrophytes were present in all blocks (Figs. 4-6 and 22-24 of Appendix O). Chara spp. occurred in relatively pure stands over most of the lightly stippled area in the figures. Potamogeton richardsonii, P. gramineus and Potamogeton spp. made up the narrow dark U-shaped band (e.g., Fig. 6 of Appendix O) adjacent to the divided shipping channels and the small patches within the Chara spp. stand. Frequency of occurrence and biomass of Potamogeton spp. were higher on the eastern wing of the wedge and those of P. richardsonii on the west side; P. gramineus was about equally abundant in both wings. Potamogeton spp. and P. gramineus dominated at the tip of the wedge. The only other common taxon, E. canadensis, occurred in deep water adjacent to the main shipping channel, in blocks 3, 5, and 6. A maximum of seven taxa (average four to five) were collected in each block (Table 2 of Appendix K). The number of taxa per Ponar grab averaged 2.6 and increased progressively over the growing season in both years (Table 28).

At Russell Island, the biomass of Chara spp., Potamogeton spp., and P. gramineus was relatively high in all nine blocks of the sampling grid (Figs. 7-9 and 25-27 of Appendix O). Concentrations of Chara spp. were highest in the lightly stippled areas of blocks 2 and 6-9 and in pure stands in blocks 6 and 7. The dark areas in blocks 1, 2, and 6 and the strip in blocks 7-9 adjacent to shore represented P. gramineus. The dark strip in blocks 7-9 also contained high concentrations of Potamogeton spp. and P. gramineus, and the dark areas in blocks 4, and 5 were P. richardsonii. Elodea was common in deeper water adjacent to the shipping channel in blocks 3 and 4. Vallisneria americana was restricted to block 4 and P. nodosus and P. natans to blocks 1, 3, 4, and 7. Taxa were distributed evenly over most of the grid, averaging three to five (maximum, 9) per block (Table 3 of Appendix K). Diversity was greatest at grid intersection 10 and in blocks 3 and 4. The number of taxa per grab averaged 2.6 and increased through the season (Table 28).

At Belle Isle most of the plants were close to shore in blocks 8-10 in an extensive littoral area (Figs. 10-12 and 28-30 of Appendix O). Few plants were found in blocks 1-7 in relatively deep water (> 12 ft). Vallisneria americana was relatively abundant in all blocks; however, its low growth profile and the reduced water clarity in the Detroit River may have decreased its visibility on the aerial photos. The large dark band in block 1 and the smaller bands in blocks 1-6 were mainly P. richardsonii, mixed with P. zosteriformis and Potamogeton spp. The dark areas in blocks 7-10 were mostly small beds of Myriophyllum spicatum, P. richardsonii, and P. gramineus. Blocks 7-10 also included extensive beds of Chara spp., Najas flexilis, and Nitellopsis obtusa which may not have been visible because of their low growth profile. Najas flexilis and P. zosteriformis occurred in all but two blocks but never at high biomass levels. The macrophyte fauna was more diverse off Belle Isle than at any other location. Eleven taxa were found at grid intersection 18 (Table 4) of Appendix K). Diversity was greatest in blocks 7-10 and averaged

Table 28. Mean number of submersed macrophyte taxa per Ponar grab at six locations in SCORS in 1983 and 1984.

Location	June		July-August		September		Grand mean
	1983	1984	1983	1984	1983	1984	
Stag Island	2.2	2.8	2.8	2.4	2.8	2.8	2.6
Fawn Island	1.9	1.9	2.9	2.7	3.2	2.9	2.6
Russell Island	2.2	2.4	2.7	2.6	3.0	2.8	2.6
Belle Isle	3.1	2.8	2.8	3.3	2.8	3.1	3.0
Pt. Hennepin	2.1	2.6	1.8	1.8	1.4	1.7	1.9
Stony Island	2.3	2.2	2.1	2.1	1.6	1.8	2.0

four to nine taxa over the sampling grid. The average number of species per grab was three and the seasonal range was 2.8-3.3 (Table 28).

On the shoals adjacent to Pt. Hennepin, Potamogeton spp. and V. americana were the dominant taxa. Narrow-leaf forms of Potamogeton spp. were found at relatively high biomass in every block except 7 and 14 in June, but had almost disappeared by September. Vallisneria americana was present in every block over all sampling dates and by September had replaced Potamogeton spp. as the most abundant taxon. Interpretation of plant distribution (Figs. 13-15 and 31-33 of Appendix O) is difficult, because many plants did not occur at densities great enough to be visible on aerial photos; the stippled areas generally represent the distribution of Potamogeton spp. in June and of V. americana in July-August and September. However, the dark bands adjacent to the channel in blocks 1, 2, 5, and 11-14 were mainly P. richardsonii. The dark bands in block 8 were composed mainly of M. spicatum, P. crispus and P. richardsonii. Chara spp. and Najas flexilis were in patches down the middle of the island, in a strip bounded by the corner of grid intersections 10, 11, 33, and 34, and are not visible in our photographs. Diversity was highest along the Fighting Island Channel, where dark and light bands adjoined. The number of species at the grid intersections ranged from two to seven (Table 5 of Appendix K). The average of 1.9 taxa per grab (the lowest for the six locations sampled) declined consistently over the season (Table 28).

The distribution of taxa at Stony Island can be grouped into three areas--the head of the island (blocks 1-5), an inlet area (blocks 6-8), and an intermediate area (blocks 9-11). The darker areas in blocks 2, 3, and 4 indicate the presence of P. richardsonii and M. spicatum (Figs. 16-18 and 34-36 of Appendix O). Potamogeton spp. and V. americana made up the lighter areas in blocks 1-5. Inside the bay the dark areas represented beds of Elodea canadensis, Heteranthra dubia, P. crispus, Ranunculus longirostris, and Myriophyllum spicatum, in pure or mixed stands. Potamogeton crispus was prevalent only in June and was replaced by H. dubia by September. The long strip of plants in blocks 9-11 is composed of H. dubia and M. spicatum. The lighter areas in blocks 9-11 show beds of V. americana. Taxa per grid ranged from zero to five with a maximum of 7 at grid intersection 5 (Table 6 of Appendix K). Taxa per grab averaged 2.0 and declined through the season (Table 28).

Distribution of Emergent Plants

Emergent macrophytes were present in only two of the sampling grids at the six locations. We collected 11 taxa at Fawn Island and Stony Island (Table 29). A small bed of Scirpus acutus was at the tip of Fawn Island in block 7 and extensive beds were in blocks 8, 10, and 11 off Stony Island. Typha latifolia and Sparganium eurycarpum usually occurred in pure stands, whereas the species of Eleocharis, Phalaris, Sagittaria, and Scirpus were usually found together in mixed stands. Because of the great size and diversity of the emergent beds at Stony Island and limited sampling effort, our coverage of the beds was not representative. The beds appeared to be stable and the percent occurrence between years for the most part reflected this stability (Table 29).

Table 29. Percent frequency of occurrence and mean dry weight biomass (g/m²) of emergent macrophytes collected at Stony Island, in the Detroit River, in 1983 and 1984.

Taxon	Occurrence		Biomass	
	1983 (n=33)	1984 (n=39)	1983	1984
<u>Eleocharis</u> spp. ^{a/}	6	15	37.2	18.4
<u>Phalaris arundinacea</u>	3	5	29.6	42.7
<u>Sagittaria latifolia</u>	12	15	13.4	35.5
<u>Sagittaria rigida</u>	0	26	0	198.0
<u>Scirpus acutus</u>	3	5	2.8	9.6
<u>Scirpus americanus</u>	18	23	178.7	299.4
<u>Scirpus fluviatilis</u>	9	3	965.8	8.2
<u>Scirpus validus</u>	9	23	28.0	44.9
<u>Sparganium eurycarpum</u>	36	33	196.2	357.5
<u>Typha angustifolia</u>	36	26	903.5	865.3

^{a/} Two closely related species, E. smallii and E. erythropoda.

Abundance of Submersed Plants

Yearly variation in abundance of taxa of submersed macrophytes by river is shown in Table 24. The biomass of Chara spp., P. gramineus, and M. spicatum increased from 1983 to 1984 in both rivers. Potamogeton crispus and Potamogeton spp. were less abundant in both rivers in 1984 than in 1983, whereas N. flexilis and P. richardsonii were more abundant in the St. Clair River but less abundant in the Detroit River in 1984 than in 1983.

Differences in biomass of dominant taxa between years and sampling periods at each sampling location are shown in Tables 25-27. In the St. Clair River in June, most taxa were less abundant in 1984 than in 1983. However, a paired comparison of all taxa showed only the differences at Russell Island to be significant. Biomass of dominant taxa declined similarly in the Detroit River, but was significant only at Belle Isle. In July, the trend of decline in taxa from 1983 to 1984 did not occur; rather the biomass of most taxa was higher in 1984 than in 1983. At Stony Island the increase in biomass in July from 1983 to 1984 was significant. In September, the change in biomass for most taxa was similar between years. Over all, two taxa--Chara spp. and N. flexilis--increased rather consistently from 1983 to 1984, whereas one taxon, Potamogeton spp., declined over the same time period. The biomass of E. canadensis at Russell Island and V. americana at Belle Isle was consistently lower in 1984 than in 1983.

An analysis of dry weight biomass of all taxa combined, by year, month, and blocks over sampling location, showed several significant differences (Table 30). However, these differences must be interpreted cautiously because most of the combinations (interactions) between year, month, and block were also significant (Appendix P). At Stag Island, biomass values were significantly higher in 1983 than in 1984 (Table 30), but this was not consistent over all months (Fig. 6) or blocks (Fig. 7). Biomass increased significantly from June to July-August to September in 1983 (Table 30), but this trend was not obvious in 1984 (Fig. 6). Biomass was higher in all blocks in September 1983, but was higher in blocks 10-13 in June and July-August 1984. A partial reason for the biomass being higher early in the year in 1984 was the occurrence of several unusually heavy samples of Chara spp. and N. flexilis in our collections in blocks 12 and 13. Collectively, biomass was highest in blocks 6-8, 12, and 13.

At Fawn Island, biomass differences between years were negligible (Table 30). In both 1983 and 1984, biomass increased steadily through the season (Fig. 6). Biomass in blocks 5, 6, and 11 was higher in 1984 than in 1983 (Fig. 8) in most months. The decline from 1983 to 1984 was greatest in blocks 1-3 at the head of the island and the increase was greatest in blocks 5-6, near the center of the grid. As at Stag Island, the high biomass of Chara spp. and N. flexilis at Fawn Island in June and July-August kept the 1984 biomass levels near those of 1983.

Macrophyte biomass at Russell Island was significantly higher in 1984

Table 30. Mean dry weight biomass (g/m²) of submersed aquatic macrophytes by year, month, and blocks (block numbers in parentheses) at six locations in SCDRS. Values jointly underlined were not significantly different ($P < 0.05$).

Location	Year		Month		Block											
Stag Island	97	86	127	97	51	184	215	177	142	146	136	86	99	77	57	57
	1983	1984	Sep.	July	June	(12)	(6)	(7)	(8)	(13)	(11)	(9)	(10)	(15)	(14)	(5)
Fawn Island	130	131	213	154	23	215	194	125	133	136	105	115	106	102	123	78
	1983	1984	Sep.	July	June	(4)	(11)	(7)	(9)	(6)	(1)	(10)	(2)	(3)	(5)	(8)
Russell Island	204	123	265	158	68	238	208	183	213	147	142	161	106	76		
	1984	1983	Sep.	July	June	(9)	(7)	(8)	(3)	(4)	(6)	(2)	(5)	(1)		
Belle Isle	106	105	140	136	41	185	161	150	124	121	98	90	45	44	37	
	1983	1984	Sep.	July	June	(9)	(8)	(7)	(10)	(3)	(5)	(1)	(6)	(4)	(2)	
Point Hennepin	75	71	93	91	35	110	106	107	86	71	67	66	62	62	61	58
	1984	1983	Sep.	July	June	(6)	(8)	(2)	(5)	(11)	(3)	(1)	(4)	(12)	(9)	(7)
Stony Island	180	146	220	161	107	382	245	224	158	128	109	101	125	77	78	
	1984	1983	Sep.	July	June	(6)	(8)	(7)	(10)	(3)	(4)	(2)	(9)	(5)	(1)	

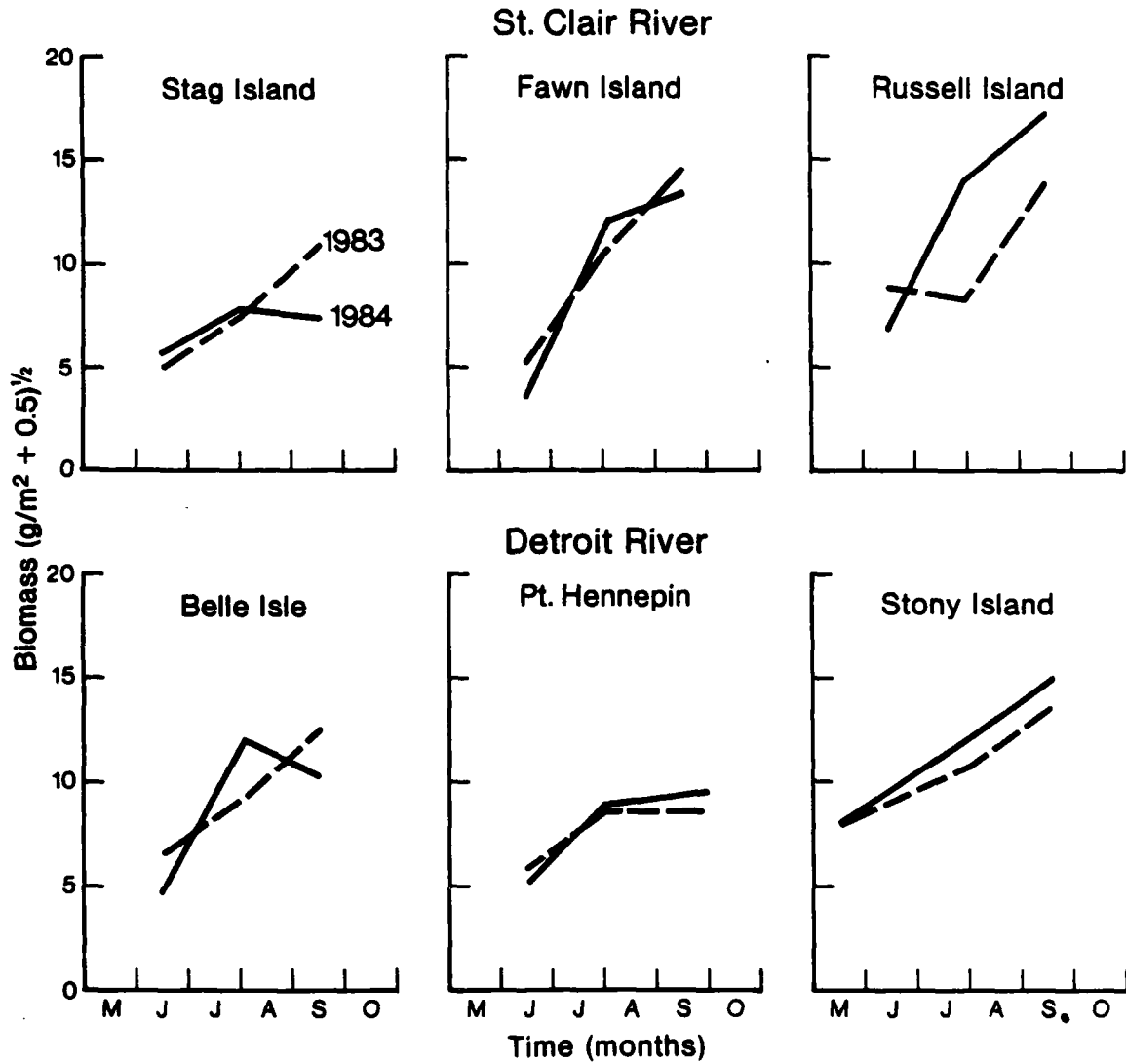


Figure 6. Mean seasonal biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes at six locations in the SCDS.

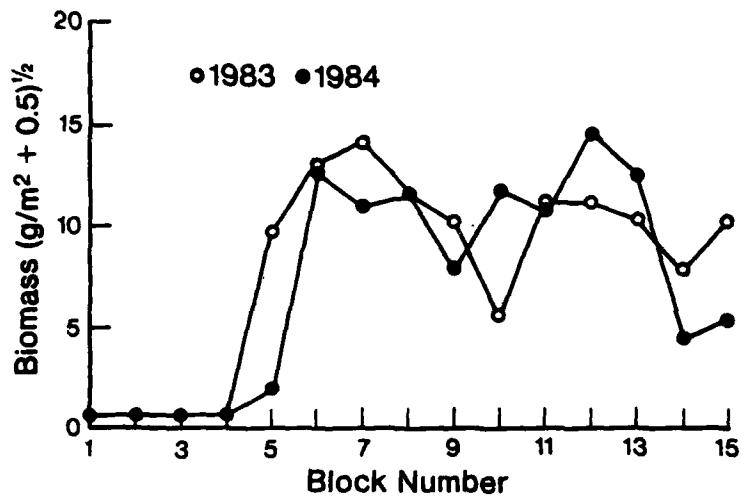


Figure 7. Mean biomass (square root of dry weight in $\text{g/m}^2 + 0.5$) of submersed macrophytes in blocks composing the sampling grid at Stag Island. (See Appendix I, Fig. 1 for block locations.)

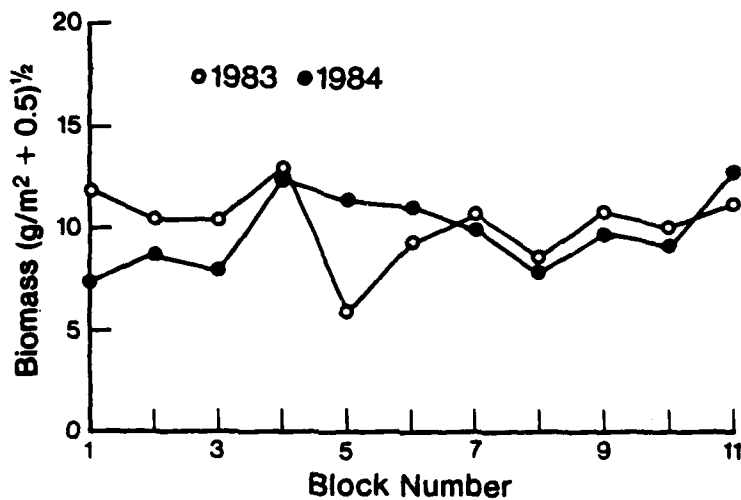


Figure 8. Mean biomass (square root of dry weight in $\text{g/m}^2 + 0.5$) of submersed macrophytes in blocks composing the sampling grid at Fawn Island. (See Fig. 2 of Appendix I for block locations.)

than in 1983 (Table 30). Although biomass was higher in 1983 than in 1984 during one month and several blocks (Figs. 6 and 9), the differences were not statistically significant. Biomass at this location tended to increase through the growing season. Biomass was highest in blocks 3 and 7-9, which were nearest the shore (Table 30). Large increases in the biomass of *Chara* spp., *P. gramineus*, and *P. richardsonii* accounted for the larger biomass in 1984.

At Belle Isle, yearly differences in dry weight biomass were negligible (Table 30), except for the high density in July-August 1984 (Fig. 6); the seasonal differences between July-August and September were not significant (Table 30). The high July-August biomass resulted mainly from high densities of *Chara* spp. and *P. richardsonii* in blocks 1, 7, and 8. Yearly differences between corresponding grids were small and trends were about the same (Fig. 10). Biomass was highest in blocks 7-10 in the downstream, shallow, protected area (Table 30).

At Point Hennepin, as at Belle Isle, differences in abundance between years and between September and July-August were not significant (Table 30). Monthly trends in biomass were similar between years (Fig. 6). Although differences between years were large in several blocks, no consistent trends were evident (Fig. 11). Biomass was highest in blocks 6 and 8, in the center of the sampling area on the side of the main shipping channel (Table 30).

For all three sampling periods, the standing crop biomass of submersed macrophytes at Stony Island was significantly higher in 1984 than in 1983 (Table 30, Fig. 6). Biomass also differed between years in all blocks except 3 and 4 (Fig. 12). Trends among blocks between years were consistent; biomass was highest in blocks 6, 7, and 8 in inlet areas. At Stony Island, unlike the other Detroit River locations, biomass increased significantly from June through September.

Abundance of Emergent Plants

We did not statistically compare yearly estimates of biomass of emergent macrophytes at Stony Island (Table 29) because sample size was too small (12 or fewer samples per taxon per year). The dry weight biomass of *Scirpus fluviatilis* and *Typha latifolia* was largest and that of *Scirpus acutus* smallest. Maximum dry weight biomasses for individual samples of *Typha* exceeded 2000 g/m². All taxa were present during each sampling period, and abundance of most taxa usually peaked in July-August. Differences in taxon biomass between years at Stony Island were mainly small. The few large differences were due to the large area and diversity of taxa in relation to sampling effort. The biomass estimates for the small emergent bed at Fawn Island can be evaluated by month and year. No samples of *S. acutus* were collected in June of either year because the plant bed had not yet broken the water surface. The biomass of this bed averaged 171 g/m² in July-August and 306 in September in both 1983 and 1984. However, the biomass in 1984 was 70% lower in July-August and 21% lower in September than in the same months in 1983.

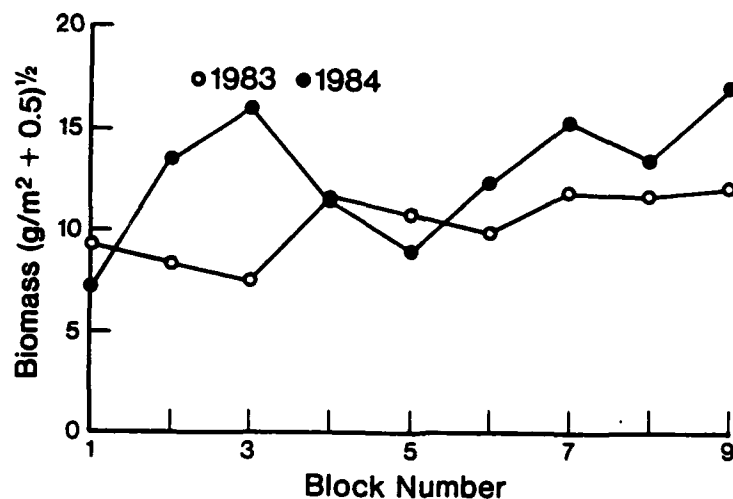


Figure 9. Mean biomass (square root of dry weight in $\text{g/m}^2 + 0.5$)^{1/2} of submersed macrophytes in blocks composing the sampling grid at Russell Island. (See Fig. 3 of Appendix I for block locations.)

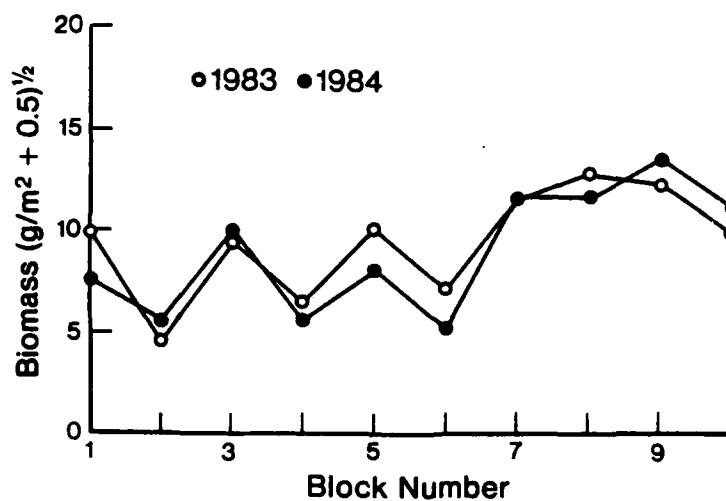


Figure 10. Mean biomass (square root of dry weight in $\text{g/m}^2 + 0.5$)^{1/2} of submersed macrophytes in blocks composing the sampling grid at Belle Isle. (See Fig. 4 of Appendix I for block locations.)

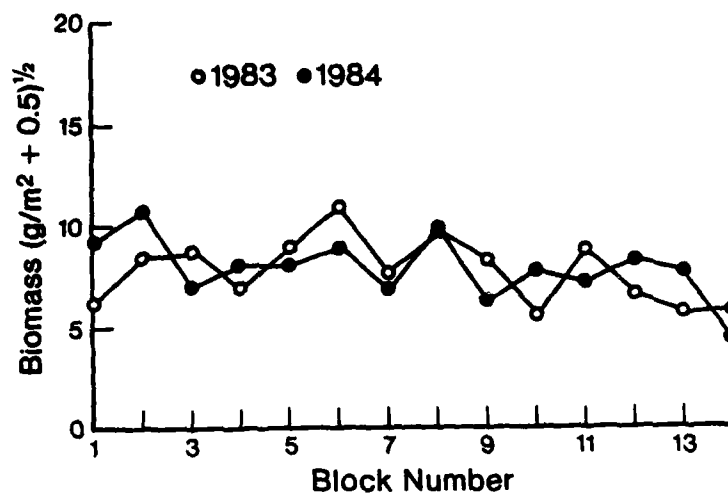


Figure 11. Mean biomass (square root of dry weight in $\text{g/m}^2 + 0.5$) of submersed macrophytes in blocks composing the sampling grid at Point Hennepin. (See Fig. 5 of Appendix I for block locations.)

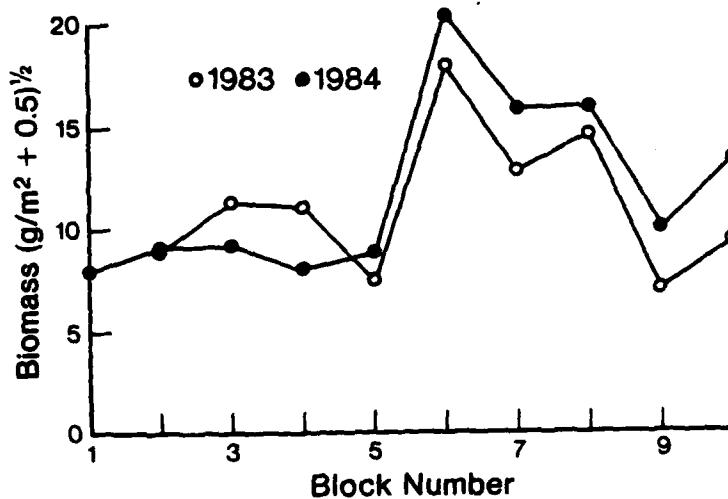


Figure 12. Mean biomass (square root of dry weight in $\text{g/m}^2 + 0.5$) of submersed macrophytes in blocks composing the grid at Stony Island. (See Fig. 6 of Appendix I for block locations.)

Areal Extent of Submersed Macrophyte Beds

The amount of area covered by plant beds at each location was estimated by overlaying the sampling grid (e.g., Fig. 1 of Appendix P) on each photograph with a grid that divided each 500-ft-square block into 100 equal sections. Each one-hundredth section was scored if half the section was covering plants, and scores were summed over each block and expressed as a percentage. Two independent estimates were obtained of the percent coverage of submersed macrophytes, by block. These estimates are given for each sampling location, month, and year in Tables 31 and 32.

At Stag Island, submersed plant beds in 1983 and 1984 covered an average of 23% of the sampling grid area in September (Table 31). Coverage increased about 7 percentage points from June to September and differences between years were small. The percent coverage by submersed macrophytes was largest in blocks 7-9 and 12.

Plant beds off Fawn Island were not clearly visible in June 1983 and were even less visible in 1984 (Appendix N). Biomass estimates for June 1984 indicated that the abundance of most taxa was reduced--except for *Chara* spp. (Table 25). By July-August and September, differences between years in percent coverage were negligible. Coverage peaked at 68% in September. This represents a difference of only 2-4 percentage points from July-August to September. Bed development was most extensive in blocks 4, 6, 7, 9, and 11.

Plant bed coverage in June at Russell Island differed greatly between 1983 and 1984 (Table 31). By July-August and September, however, the coverage between the two years differed only by 5-6 percentage points. Seasonal differences, once the beds developed, were about 2-3 percentage points. Bed coverage over the sampling area averaged 66%. Coverage of submersed macrophytes was most extensive in blocks 4, 5, and 7-9.

Plant bed coverage at Belle Isle in June and July-August was also substantially less in 1984 than in 1983, but differences in September were negligible (Table 32). Differences in coverage between sampling periods did not exceed 5 percentage points in 1983. The coverage was greatest (26%) in September and was generally highest in blocks 7-9.

Plant bed cover at Point Hennepin and Stony Island differed markedly from that at other locations. Coverage was greater and seasonal differences were larger in 1984. Bed coverage at Point Hennepin averaged 57% in September and was 8-9 percentage points lower in June (Table 32). Plant coverage was greatest in blocks 3, 6, and 9.

Seasonal differences at Stony Island were 41 to 51 percentage points (Table 32). Maximum bed development was in September and averaged 78%; coverage was greatest in blocks 8, 10, and 11. The difference in seasonal development occurred mainly in blocks 1-5 at the upstream end of the island. Water depth of 10-12 ft and low water clarity (mean transmittance was 14% in this area) prevented observation of macrophyte beds until September, when they reached the water surface.

Table 31. Percent coverage of submersed macrophyte beds in the sampling grid at Stag, Fawn, and Russell islands in June, July-August, and September, 1983 and 1984.

Block number	June		July-August		September	
	1983	1984	1983	1984	1983	1984
Stag Island						
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	5	0	3	0	1	1
6	1	3	18	8	20	16
7	31	38	55	42	50	39
8	38	38	34	55	70	52
9	38	44	35	33	39	41
10	20	10	20	11	36	30
11	12	25	39	28	31	20
12	60	61	50	59	58	66
13	9	10	14	26	20	38
14	9	12	9	14	15	6
15	10	15	24	27	22	16
Mean	16	17	20	20	24	22
Fawn Island						
1	6	0	6	6	9	7
2	39	0	73	72	72	69
3	16	0	44	55	45	41
4	5	0	100	100	100	100
5	6	0	10	9	16	14
6	6	0	98	92	98	99
7	6	9	100	100	100	100
8	0	0	58	69	75	86
9	0	0	100	100	100	100
10	0	0	11	25	25	34
11	1	0	98	100	100	100
Mean	7	1	63	66	67	68
Russell Island						
1	42	0	50	28	52	30
2	41	16	43	14	42	28
3	4	0	7	9	14	11
4	66	12	85	72	92	78
5	53	25	100	100	100	100
6	16	0	22	36	26	33
7	12	32	88	86	93	88
8	100	10	100	100	100	100
9	100	41	100	100	100	100
Mean	48	25	66	61	69	63

Table 32. Percent coverage of submersed macrophyte beds in the sampling grid at Belle Isle, Point Hennepin, and Stony islands in June, July-August, and September, 1983 and 1984.

Block number	June		July		September	
	1983	1984	1983	1984	1983	1984
Belle Isle						
1	14	9	16	14	23	11
2	2	1	4	6	1	10
3	15	6	7	9	1	8
4	2	4	2	3	2	3
5	22	4	22	3	20	20
6	6	4	5	6	3	4
7	50	12	63	20	75	34
8	48	12	63	47	69	72
9	38	17	38	36	53	59
10	23	6	17	19	27	30
Mean	22	8	24	16	27	25
Point Hennepin						
1	58	70	61	81	64	90
2	50	30	48	55	42	92
3	95	100	86	94	79	89
4	9	25	12	21	17	16
5	39	61	51	70	73	82
6	100	100	95	95	92	88
7	11	31	16	26	19	25
8	74	39	67	59	64	78
9	88	41	93	68	100	100
10	1	25	5	24	6	19
11	50	75	59	62	69	53
12	42	77	51	83	59	95
13	0	22	17	15	28	0
14	1	45	19	38	23	39
Mean	44	53	49	56	52	62
Stony Island						
1	0	0	0	0	42	17
2	0	9	22	26	100	95
3	0	0	90	73	81	84
4	0	6	31	47	36	81
5	0	11	1	28	84	100
6	45	39	45	78	81	86
7	38	42	39	73	92	99
8	100	100	100	100	100	100
9	33	20	23	58	23	63
10	55	63	41	94	94	96
11	81	72	70	64	72	100
Mean	32	33	42	58	73	84

Relationship between Macrophytes and Physical Environment

Water depth, light transmission, and current velocity measurements were taken with each group of three Ponar samples and at each grid line intersection (Tables 1-6 of Appendix K). Water depth at grapnel stations sometimes exceeded 30 ft. Many stations were located in or adjacent to the shipping channel, where a difference in horizontal distance of 25 to 50 ft was accompanied by a change in water depth of up to 18 ft. Light transmission varied from 0 to 98%. Transmission was high in shallow water in beds of *Chara* spp., and low in deep water or in thick beds of submersed macrophytes. Currents ranged from a maximum of 4.0 ft/s at the head of Stag Island to zero in shallow, protected areas at Belle Isle and Stony Island.

The average depths at which Ponar samples of submersed plants were collected varied little between the sampling locations, ranging only from 8 ft at Stag Island to 6 ft at Point Hennepin and Stony Island (Table 33). Light transmission and current velocity varied more widely. Average light transmission was 72% lower at Stony Island than at Stag Island, and values were typically about 2-3 times higher in the St. Clair River than in the Detroit River. Similarly, current velocities in the St. Clair River were about twice those in the Detroit River. In general, bottom current velocities were about 55% of those at the surface.

In the St. Clair River, light transmission and current velocity decreased markedly from June to September in beds of submersed plants but declined less sharply or not at all in adjacent areas without plants (Table 34). Average reduction in light transmission values was 25-60% in plant beds and 14-35% in adjacent plant-free areas. Reduction of light transmission values in plant-free areas was probably due to changes in sediment turbidity or plankton abundance. Current velocities decreased 10-50% at the surface and 30-70% at the bottom between June and September in plant beds, but did not decrease in areas devoid of plants. Reduction in average current velocity during the season ranged from 50 to 80% (Table 34). Reductions were similar in the Detroit River but were not as obvious because the seasonal ranges of light and current velocities were smaller.

We treated average water depth, light transmission, and current velocity data associated with each of the common macrophyte taxa shown (Table 35), separately by river, but averaged them over months to mask the variation in seasonal changes in light and velocity. The purpose of the table is to provide an average condition under which the taxa occur in the two rivers, and thus enable us to group taxa that occur under similar conditions. The table also includes the result of a correlation analysis between the biomass of each taxon and depth, light, and velocity.

Several taxa in both rivers were associated more frequently than others with various depth levels, light transmissions, and current velocities (Table 36). For example, both *P. richardsonii* and *P. gramineus* were more common in areas where current velocities exceeded 0.7 ft/s, but *P. richardsonii* occurred

Table 33. Mean depth (ft), light transmittance (%), and current velocity (ft/s) at stations where submersed macrophytes were sampled in the St. Clair and Detroit rivers.

Location	Depth	Light transmittance	Current velocity	
			Surface	Bottom
Stag Island	8	50	1.5	1.0
Fawn Island	6	47	1.2	0.7
Russell Island	7	36	1.3	0.6
Belle Isle	7	19	0.6	0.4
Point Hennepin	6	16	0.3	0.1
Stony Island	6	14	0.7	0.4

Table 34. Mean light transmittance (%) and current velocities (ft/s) measured in beds of submersed macrophytes and in areas without submersed macrophyte beds in the St. Clair River in 1983 and 1984^{a/}.

Taxon	Light transmittance			Current velocity		
	June	July-August	September	June	July-August	September
No plants	64	42	45	2.2 ^{a/}	2.6	2.2
<u>Chara spp.</u>	57	55	43	1.2	0.7	0.6
<u>Elodea canadensis</u>	47	27	20	1.0	0.4	0.3
<u>Myriophyllum spicatum</u>	48	27	19	0.7	0.3	0.2
<u>Nitella flexilis</u>	41	33	28	1.4	1.1	0.4
<u>Potamogeton gramineus</u>	53	50	38	1.5	0.8	0.6
<u>Potamogeton spp.</u>	55	42	33	1.4	0.7	0.6
<u>Potamogeton richardsonii</u>	49	36	24	1.4	0.5	0.3

^{a/} Mean of measurements at surface and bottom.

Table 35. Mean depth (ft), light transmittance (%), and current velocity (ft/s) in beds of submersed macrophyte taxon in the St. Clair (S) and Detroit (D) rivers, June 14 - September 20, 1983-1984.

Taxon	Sample size		Depth		Light transmittance		Current velocity	
	S	D	S	D	S	D	S	D
<u>Chara</u> spp.	559	115	6(-) ^{a/}	7(-)	52(+)	24(+)	0.8	0.4
<u>Elodea canadensis</u>	218	48	9	5	31	10	0.6	0.2
<u>Heteranthera dubia</u>	F ^{b/}	47	F	5	F	14	F	0.4
<u>Myriophyllum spicatum</u>	86	150	8(-)	6	31	21	0.4	0.3
<u>Najas flexilis</u>	40	51	4	6	48	25	0.7	0.4
<u>Nitella hyalina</u>	56	89	9	6	34	18	1.0	0.2
<u>Nitellopsis obtusa</u>	F	71	F	6	F	27	F	0.2
<u>Potamogeton crispus</u>	34	80	8	6	44	10	0.4	0.3
<u>Potamogeton gramineus</u>	328	33	6(+)	6	47	26	1.0	0.4
<u>Potamogeton</u> spp.	424	266	7	6(-)	43	19	0.9	0.3(-)
<u>Potamogeton richardsonii</u>	253	179	8	7	36	12	0.7	0.4
<u>Potamogeton zosteriformis</u>	24	47	7	8	53	19	0.5	0.3
<u>Vallisneria americana</u>	32	551	6	7	38	16(-)	0.4	0.3

a/ Significant correlation ($P < 0.05$) between taxon biomass and physical variables, sign indicates inverse (-) or positive (+) relationship.

b/ Few or none present.

Table 36. Taxa associations with water depth, light transmission, and current velocity in the St. Clair and Detroit rivers, June-September 1983-1984.

<u>St. Clair River</u>			
Mean depth > 7 ft. Mean light transmission < 42%		Mean depth < 7 ft. Mean light transmission > 42%	
Velocity (ft/s)			
> 0.7	< 0.7	> 0.7	< 0.7
<u>P. richardsonii</u>	<u>Elodea canadensis</u> <u>Myriophyllum spicatum</u>	<u>Chara spp.</u> <u>P. gramineus</u>	<u>Potamogeton spp.</u>

<u>Detroit River</u>	
Mean Depth > 6 ft. Velocity ≥ 0.3 ft/s	
Mean light transmission > 21%	Mean light transmission < 16%
<u>Chara spp.</u> <u>Myriophyllum spicatum</u>	<u>Vallisneria americana</u> <u>P. richardsonii</u>

more frequently than P. gramineus in water deeper than 7 ft. Vallisneria and P. richardsonii appear to be adapted to the low light transmission in the Detroit River.

Significant correlations of the biomass of macrophyte taxa with physical measurements were few; they are most often with depth and least often with current (Table 35). Chara spp. in both rivers was associated negatively with depth and positively with light. Since these two physical variables are inversely related, Chara spp. biomass may be limited by low light. The negative correlation between Potamogeton spp. and depth may be related to the higher current usually associated with deeper water near the navigation channel in the Detroit River. The biomass of Potamogeton gramineus tended to be higher in deeper water in the St. Clair River. Biomass of Myriophyllum spicatum in the St. Clair River was higher at depths greater than 8 ft than at lesser depths.

JUVENILE AND ADULT FISH

Composition and Distribution of Catch

We captured 1,775 fish of 36 different species in 1983 and 1,038 fish of 26 species in 1984 (Table 37 and Appendix R). Of the 39 species represented, only 7 were captured commonly (> 50 fish/year): yellow perch, rock bass, hornyhead chub, spottail shiner, striped shiner, rainbow smelt and white sucker, collectively made up 86% of the total for both years combined. Only yellow perch and rock bass were common in both rivers in both years. Thirteen species collected in 1983 were not taken in 1984; of these, 11 were represented by a single individual and the other 2 by 3 and 10 specimens. Three species caught in 1984 but not in 1983 were represented by only one fish each.

A larger number of fish species were collected in the Detroit River than in the St. Clair River, particularly in 1983. Sixteen species were collected only in the Detroit River, of which channel catfish, stonecat, white bass, white perch, and brown bullhead were abundant enough to be considered common (Table 37). Trout-perch, striped shiner, and rainbow trout were collected only in the St. Clair River. Frequency of capture of most species by year, river, or presence of vegetation was erratic (Tables 37, 38, and 39).

In both 1983 and 1984, the numerically dominant species in the catch, yellow perch and rock bass, were collected during every month (Table 40). Two common species, rainbow smelt and spottail shiners, were collected most often in May and June. Catches of other species showed both seasonal and spatial variation. Channel catfish were present only in the Detroit River, where they were captured in all months except July. In the St. Clair River, striped shiners were abundant in June and October and hornyhead chubs from July to October. Some of the large seasonal catches probably reflected migrations or spawning runs. For example, the white suckers captured in May were gravid and the hornyhead chubs captured in July were in spawning coloration and had well-developed breeding tubercles.

Table 37. Total number, percent of total, and mean length (mm) of fish collected in the St. Clair and Detroit rivers during 1983 and 1984.

Common name	Scientific name	1983			1984		
		Number	Percent	Mean length (mm)	Number	Percent	Mean length (mm)
Yellow perch	<u>Perca flavescens</u>	989	56	120	365	35	149
Rock bass	<u>Ambloplites rupestris</u>	296	17	130	246	24	155
Hornyhead chub	<u>Nocomis biguttatus</u>	188	11	110	43	4	117
Spottail shiner	<u>Notropis hudsonius</u>	70	4	101	15		105
Striped shiner	<u>Notropis chrysocephalus</u>	55	3	100	1		95
Rainbow smelt	<u>Osmerus mordax</u>	46	3	116	146	14	115
Smallmouth bass	<u>Micropterus dolomieu</u>	20	1	101	5		247
Channel catfish	<u>Ictalurus punctatus</u>	18	1	419	34	3	441
White sucker	<u>Catostomus commersoni</u>	12	1	178	61	6	434
Stoneroller	<u>Noturus flavus</u>	11	1	206	35	3	216
White perch	<u>Morone americana</u>	10	1	143	0		-
Common carp	<u>Cyprinus carpio</u>	9		475	3		519
Bluegill	<u>Lepomis macrochirus</u>	6		145	2		254
White bass	<u>Morone chrysops</u>	6		242	1		83
Black crappie	<u>Pomoxis nigromaculatus</u>	5		228	5		167
Pumpkinseed	<u>Lepomis gibbosus</u>	4		137	6		140
Brown bullhead	<u>Ictalurus nebulosus</u>	3		264	5		279
Yellow bullhead	<u>Ictalurus natalis</u>	3		231	0		-
Black redbreast	<u>Moxostoma duquesnei</u>	3		397	5		459
Northern pike	<u>Esox lucius</u>	2		660	1		775
Alewife	<u>Alosa pseudoharengus</u>	2		120	44	4	80
Golden redbreast	<u>Moxostoma erythrum</u>	2		420	1		496
Trout-perch	<u>Percopsis omiscomaycus</u>	2		120	2		111
Logperch	<u>Percina caprodes</u>	1		105	0		-
Central stoneroller	<u>Camptostoma anomalum</u>	1		126	0		-
Walleye	<u>Stizostedion vitreum vitreum</u>	1		254	8		405
Gizzard shad	<u>Dorosoma cepedianum</u>	1		106	0		-
White crappie	<u>Pomoxis annularis</u>	1		205	0		-
Common shiner	<u>Notropis cornutus</u>	1		106	0		-
Freshwater drum	<u>Aplodinotus grunniens</u>	1		373	1		375
Bigmouth buffalo	<u>Ictiobus cyrinellus</u>	1		370	0		-
Mottled sculpin	<u>Cottus bairdii</u>	1		71	0		-
Large-mouth bass	<u>Micropterus salmoides</u>	1		98	0		-
Bowfin	<u>Amia calva</u>	1		532	0		-
Emerald shiner	<u>Notropis atherinoides</u>	1		94	0		-
Goldfish	<u>Carassius auratus</u>	1		161	0		-
W. perch x w. bass hybrid	-	0		-	1		106
Rainbow trout	<u>Salmo gairdneri</u>	0		-	1		320
American eel	<u>Anguilla rostrata</u>	0		-	1		602
Total		1,775			1038		

Table 38. Numbers and weights (g) of fish collected in the St. Clair and Detroit rivers in 1983 and 1984.

Species	1983				1984			
	St. Clair		Detroit		St. Clair		Detroit	
	No.	Wt(g)	No.	Wt(g)	No.	Wt(g)	No.	Wt(g)
Yellow perch	733	18391	256	6131	250	10186	115	5151
Hornyhead chub	176	2857	12	236	38	631	5	130
Rock bass	153	11108	143	9271	88	12784	158	13339
Striped shiner	55	818	0	0	1	10	0	0
Spottail shiner	38	465	32	357	2	22	13	135
Rainbow smelt	28	368	18	82	146	1260	0	0
Smallmouth bass	15	323	5	51	3	1944	2	38
White sucker	11	1815	1	100	6	6547	55	46030
Black crappie	5	840	1	350	1	352	1	178
Bluegill	2	180	4	99	0	0	1	12
Pumpkinseed	2	74	2	200	3	168	3	236
Alewife	2	31	0	0	31	234	13	36
Trout-perch	2	27	0	0	2	24	0	0
Common carp	1	2700	8	11824	0	0	3	5100
Northern pike	1	1500	1	2000	1	1700	0	0
Bowfin	1	1400	0	0	0	0	0	0
Walleye	1	120	0	0	4	1442	4	3650
Largemouth bass	1	14	0	0	0	0	0	0
Common shiner	1	13	0	0	0	0	0	0
Mottled sculpin	1	6	0	0	0	0	0	0
Channel catfish	0	0	18	16458	0	0	34	29188
Stonecat	0	0	11	1384	0	0	35	3988
White perch	0	0	10	470	0	0	0	0
White bass	0	0	5	1227	0	0	5	490
Black redhorse	0	0	3	1967	3	2722	2	1672
Brown bullhead	0	0	3	663	0	0	5	1462
Yellow bullhead	0	0	3	388	0	0	0	0
Golden redhorse	0	0	2	1582	1	1200	0	0
Bigmouth buffalo	0	0	1	800	0	0	0	0
Freshwater drum	0	0	1	680	1	650	0	0
White crappie	0	0	1	150	0	0	0	0
Goldfish	0	0	1	74	0	0	0	0
Stoneroller	0	0	1	13	0	0	0	0
Logperch	0	0	1	10	0	0	0	0
Gizzard shad	0	0	1	9	0	0	0	0
Emerald shiner	0	0	1	7	0	0	0	0
Rainbow trout	0	0	0	0	1	258	0	0
American eel	0	0	0	0	0	0	1	360
White perch X white bass hybrid	0	0	0	0	0	0	1	16
Total	1229	44768	546	54655	582	42139	456	111211

Table 39. Numbers and weights (g) of fish collected in vegetated or non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

Species	1983				1984			
	Vegetated		Non-vegetated		Vegetated		Non-vegetated	
	No.	Wt	No.	Wt	No.	Wt	No.	Wt
Yellow perch	714	16282	275	8240	191	7664	174	7673
Rock bass	130	8197	166	12182	107	9029	139	17094
Hornyhead chub	113	1869	75	1224	22	386	21	380
Striped shiner	45	723	10	95	1	10	0	0
Spottail shiner	44	539	26	283	8	80	7	77
Channel catfish	7	7100	11	9358	10	9140	24	20048
Common carp	5	6180	4	8344	3	5100	0	0
Smallmouth bass	5	40	15	334	1	28	4	1954
Rainbow smelt	4	18	42	432	99	836	47	424
Black redhorse	3	1967	0	0	5	4394	0	0
Pumpkinseed	3	140	1	134	2	92	4	312
White sucker	3	139	9	1776	3	3249	58	49328
White perch	3	43	7	427	0	0	0	0
Brown bullhead	2	449	1	214	5	1462	0	0
Stonecat	2	214	9	1170	21	2460	14	1528
Northern pike	1	2000	1	1500	1	1700	0	0
Bowfin	1	1400	0	0	0	0	0	0
Freshwater drum	1	680	0	0	0	0	1	650
Golden redhorse	1	708	1	874	1	1200	0	0
Black crappie	1	214	5	976	1	352	1	178
Yellow bullhead	1	190	2	198	0	0	0	0
White crappie	1	150	0	0	0	0	0	0
Goldfish	1	74	0	0	0	0	0	0
Alewife	1	16	1	15	3	70	41	200
Bluegill	1	14	5	265	1	12	0	0
Largemouth bass	1	14	0	0	0	0	0	0
Common shiner	1	13	0	0	0	0	0	0
Stoneroller	1	13	0	0	0	0	0	0
White bass	0	0	5	1227	4	148	1	342
Trout-perch	0	0	2	27	1	12	1	12
Bigmouth buffalo	0	0	1	800	0	0	0	0
Walleye	0	0	1	120	4	2342	4	2750
Logperch	0	0	1	10	0	0	0	0
Gizzard shad	0	0	1	9	0	0	0	0
Emerald shiner	0	0	1	7	0	0	0	0
Mottled sculpin	0	0	1	6	0	0	0	0
American eel	0	0	0	0	1	360	0	0
Rainbow trout	0	0	0	0	0	0	1	258
White perch X white bass hybrid	0	0	0	0	0	0	1	16
Total	1096	50309	679	49779	495	50126	543	103224

Table 40. Numbers of common species of fish collected in the St. Clair and Detroit rivers, May-October 1983 and 1984.

Month and species	St. Clair River		Detroit River	
	1983	1984	1983	1984
May				
Rainbow smelt	20	0	18	0
Spottail shiner	20	0	12	3
White sucker	1	0	0	55
Rock bass	1	3	24	40
Yellow perch	1	5	22	26
Stonecat	0	0	1	2
June				
Yellow perch	67	14	8	10
Striped shiner	18	0	0	0
Hornyhead chub	13	0	0	1
Rainbow smelt	8	146	0	0
Rock bass	6	4	32	43
Trout-perch	1	2	0	0
Spottail shiner	0	1	9	4
White perch	0	0	8	0
White bass	0	0	5	3
Stonecat	0	0	1	21
July				
Yellow perch	186	68	84	18
Hornyhead chub	59	6	7	1
Rock bass	40	45	33	28
Alewife	2	0	0	11
Pumpkinseed	1	0	0	2
Spottail shiner	1	0	8	5
Channel catfish	0	0	4	2
Black redhorse	0	0	1	1
Smallmouth bass	0	3	0	0
Common carp	0	0	0	3
September				
Yellow perch	223	106	40	14
Rock bass	51	20	23	19
Hornyhead chub	41	2	1	2
Smallmouth bass	13	0	0	0
Spottail shiner	13	1	3	0
White sucker	5	0	0	0
Northern pike	1	1	0	0
Black crappie	1	1	0	0
Pumpkinseed	1	2	2	0
Channel catfish	0	0	9	29
Common carp	0	0	3	0
Stonecat	0	0	3	2
Black redhorse	0	3	1	1
Alewife	0	30	0	0
October				
Brown bullhead	0	0	0	5
Yellow perch	256	57	102	47
Hornyhead chub	63	30	3	1
Rock bass	55	16	31	28
Striped shiner	35	0	0	0
Black crappie	4	0	1	1
White sucker	4	6	1	0
Spottail shiner	4	0	0	1
Smallmouth bass	2	0	5	2
Common carp	1	0	3	0
Stonecat	0	0	6	9
Channel catfish	0	0	5	3

An average of 2.4 species were collected per net set in 1983-1984. The average number of species caught was nominally higher in 1983 than 1984 at all locations (Table 41), but was significantly higher only at Stony Island. The number of fish species per net set was highest during July-October at most locations in both years (Fig. 13). Catches were significantly greater in October than in May and July at Russell Island, and in July than in May at Stag Island (Table 41). There were no significant differences in the number of species collected per net set in the vegetated or non-vegetated areas at each location, and catches were not consistently higher in either type of habitat over all locations (Table 41). The number of species collected differed slightly between nets set in vegetated and non-vegetated areas in July and September (Fig. 14).

Abundance

The mean catch for all species combined was larger in 1983 than in 1984, increased from May to October, was larger in the St. Clair River than in the Detroit River, and was larger in nets set in vegetated than in non-vegetated areas (Table 42). To determine if these differences were significant, we analyzed the variance of total catch and the abundance of yellow perch and rock bass, the two most abundant species, against year, month, river, locations, and presence or absence of vegetation (Appendix T). Computationally, this is a lengthy analysis, and to simplify it, we analyzed each location separately. We found few significant differences in catch between years, among months, or between vegetated and non-vegetated areas.

The mean catch of all species combined was not significantly different between 1983 and 1984 at any of the locations (Table 43). The catch in 1984 was 69% lower than in 1983 at Stag Island and 29% higher than in 1983 at Stony Island. Differences in catch between years at each island declined progressively from upstream to downstream locations (Fig. 15). Thus, there was a 53% decline in the St. Clair River from 1983 to 1984 and a 16% decline in the Detroit River. Catches in July, August, and September, were 54, 44, and 65% lower, respectively, in 1984 than in 1983 (Fig. 16). Fluctuations between years were substantially lower in the Detroit than in the St. Clair river. Monthly trends in catch at each location changed little between years. Nets set in vegetated areas at Fawn Island contained significantly more fish than did those set in non-vegetated areas. At all other islands, catches in nets set in vegetated and non-vegetated areas did not differ significantly (Table 43). For all islands, catches were 50% less in 1984 than in 1983 in vegetated areas and 27% less in non-vegetated areas (Table 44). More fish were caught in nets set in vegetation in both rivers in 1983 and in the St. Clair River in 1984, but not in the Detroit River in 1984. Seasonal differences between catches in vegetated and non-vegetated areas were small in May and October and largest in June, July, and September (Fig. 17).

The mean catch of yellow perch was consistently higher in 1983 than in 1984, but this difference was significant only at Russell Island and Belle Isle (Table 45). Catches were higher in July, September, and October at most

Table 41. Mean numbers of fish species collected by year, month and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	<u>2.5</u> 1983	<u>2.0</u> 1984	<u>3.6</u> Oct.	<u>3.0</u> Sep.	<u>1.9</u> June	<u>1.6</u> May	<u>1.1</u> July	<u>2.3</u> (N)	<u>2.2</u> (V)
Fawn Island	<u>2.1</u> 1983	<u>1.9</u> 1984	<u>2.5</u> Sep.	<u>2.5</u> July	<u>2.0</u> Oct.	<u>2.0</u> June	<u>1.0</u> May	<u>2.4</u> (V)	<u>1.7</u> (N)
Russell Island	<u>2.8</u> 1983	<u>2.2</u> 1984	<u>2.9</u> July	<u>2.8</u> Sep.	<u>2.8</u> Oct.	<u>2.8</u> June	<u>1.3</u> May	<u>2.7</u> (V)	<u>2.2</u> (N)
Belle Isle	<u>2.4</u> 1983	<u>2.1</u> 1984	<u>2.9</u> Oct.	<u>2.5</u> July	<u>2.3</u> Sept.	<u>2.1</u> May	<u>1.5</u> June	<u>2.4</u> (N)	<u>2.1</u> (V)
Point Hennepin	<u>2.2</u> 1983	<u>1.8</u> 1984	<u>2.6</u> Oct.	<u>2.3</u> July	<u>1.9</u> May	<u>1.6</u> June	<u>1.5</u> Sep.	<u>2.1</u> (V)	<u>1.9</u> (N)
Stony Island	<u>3.7</u> 1983	<u>2.7</u> 1984	<u>4.1</u> Sep.	<u>3.5</u> Oct.	<u>3.1</u> June	<u>2.9</u> July	<u>2.4</u> May	<u>3.4</u> (V)	<u>3.0</u> (N)

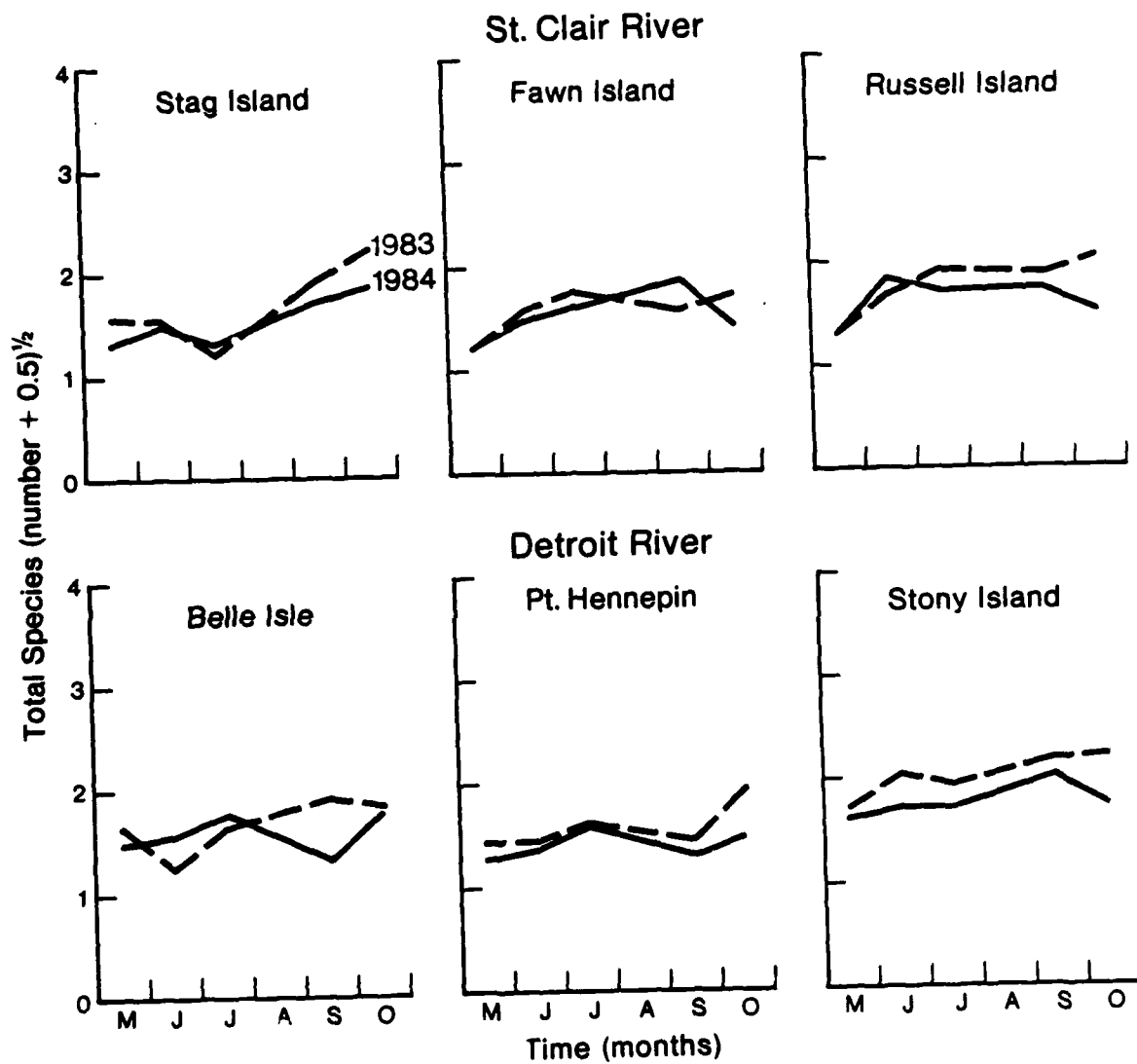


Figure 13. Seasonal diversity (square root of total number of species captured per net set + 0.5) of fish at six locations in the SCDRS.

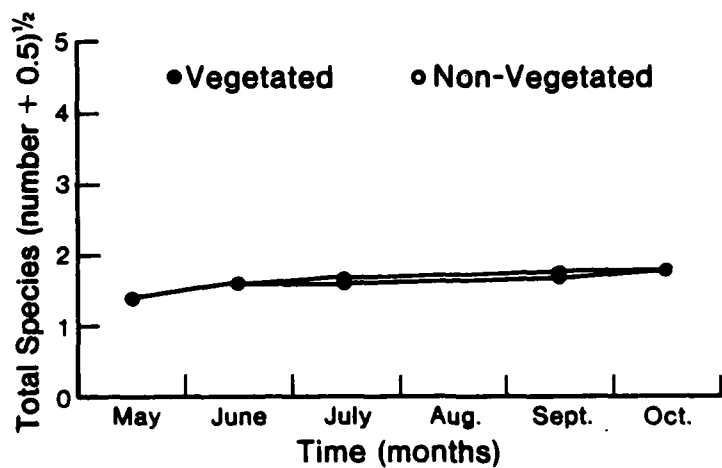


Figure 14. Seasonal diversity (square root of total number of species captured per net set + 0.5) of fishes in vegetated and non-vegetated areas.

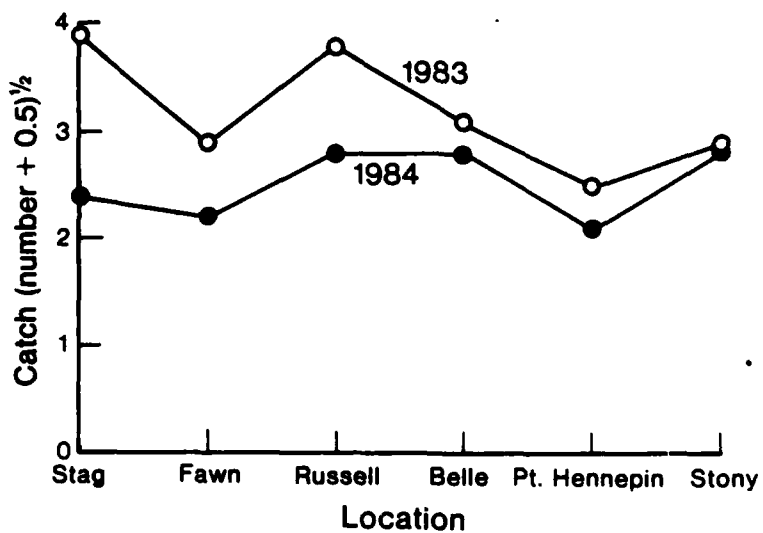


Figure 15. Mean catch (square root of mean catch + 0.5) of fish at six locations in the SCDRS.

Table 42. Mean total catch of fish by year, month, river, location, and vegetated and non-vegetated areas in the St. Clair and Detroit rivers.

Effect	N	Mean
Year		
1983	120	14.8
1984	120	8.6
Month		
May	48	5.5
June	48	9.1
July	48	13.1
September	48	14.2
October	48	16.6
River		
St. Clair	120	15.1
Detroit	120	8.4
Location		
Stag Island	40	18.5
Fawn Island	40	11.0
Russell Island	40	15.8
Belle Isle	40	9.3
Pt. Hennepin	40	6.6
Stony Island	40	9.2
Plants		
Non-vegetated	126	9.7
Vegetated	114	14.0

Table 43. Total catch of adult and juvenile fish by year, month, and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	<u>28.2</u> <u>1983</u>	<u>8.8</u> <u>1984</u>	<u>47.5</u> <u>Oct.</u>	<u>35.2</u> <u>Sep.</u>	<u>3.6</u> <u>May</u>	<u>3.5</u> <u>June</u>	<u>2.5</u> <u>July</u>	<u>21.0</u> <u>(N)</u>	<u>16.0</u> <u>(V)</u>
Fawn Island	<u>14.0</u> <u>1983</u>	<u>8.1</u> <u>1984</u>	<u>18.8</u> <u>July</u>	<u>16.9</u> <u>Sep.</u>	<u>10.2</u> <u>June</u>	<u>9.2</u> <u>Oct.</u>	<u>0.1</u> <u>May</u>	<u>20.4</u> <u>(V)</u>	<u>4.2</u> <u>(N)</u>
Russell Island	<u>19.2</u> <u>1983</u>	<u>12.2</u> <u>1984</u>	<u>30.2</u> <u>July</u>	<u>22.1</u> <u>June</u>	<u>12.8</u> <u>Sep.</u>	<u>10.2</u> <u>Oct.</u>	<u>3.4</u> <u>May</u>	<u>17.8</u> <u>(V)</u>	<u>13.5</u> <u>(N)</u>
Belle Isle	<u>11.0</u> <u>1983</u>	<u>7.6</u> <u>1984</u>	<u>15.0</u> <u>Oct.</u>	<u>10.4</u> <u>July</u>	<u>7.6</u> <u>May</u>	<u>7.0</u> <u>June</u>	<u>6.5</u> <u>Sep.</u>	<u>9.6</u> <u>(N)</u>	<u>8.9</u> <u>(V)</u>
Point Hennepin	<u>8.2</u> <u>1983</u>	<u>5.0</u> <u>1984</u>	<u>10.5</u> <u>Oct.</u>	<u>10.2</u> <u>July</u>	<u>5.2</u> <u>May</u>	<u>3.8</u> <u>Sep.</u>	<u>3.2</u> <u>June</u>	<u>7.4</u> <u>(V)</u>	<u>5.9</u> <u>(N)</u>
Stony Island	<u>10.3</u> <u>1984</u>	<u>8.0</u> <u>1983</u>	<u>13.2</u> <u>May</u>	<u>10.2</u> <u>Sep.</u>	<u>8.5</u> <u>June</u>	<u>7.4</u> <u>Oct.</u>	<u>6.4</u> <u>July</u>	<u>10.2</u> <u>(N)</u>	<u>7.9</u> <u>(V)</u>

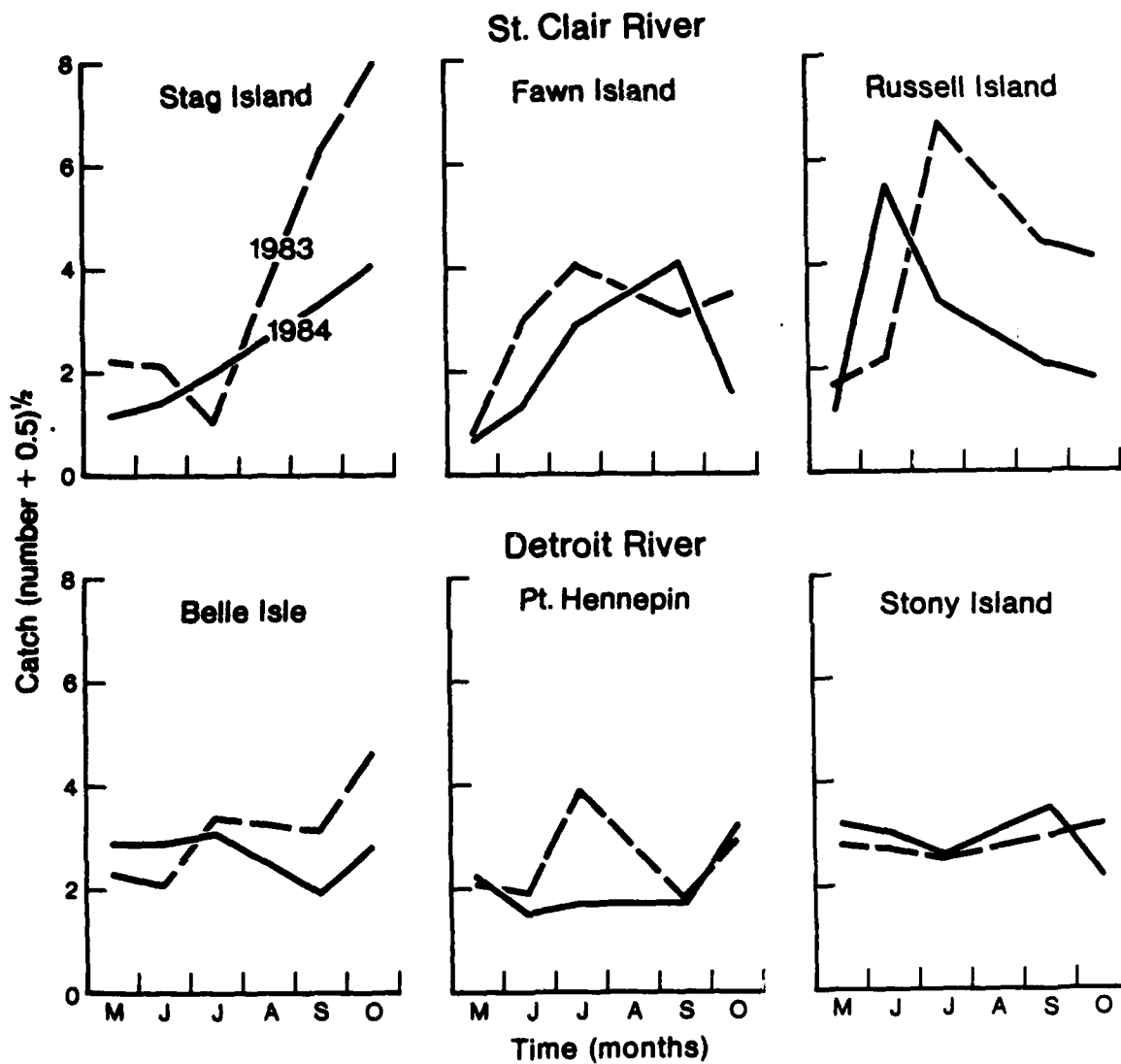


Figure 16. Mean seasonal catch (square root of mean catch + 0.5) of fish at six locations in the SCDRS.

Table 44. Number of fish caught by month in vegetated and non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

Month	St. Clair River				Detroit River			
	Vegetated		Non-vegetated		Vegetated		Non-vegetated	
	1983	1984	1983	1984	1983	1984	1983	1984
May	24	7	23	3	32	8	50	120
June	86	109	32	60	18	56	50	26
July	179	78	111	44	80	28	61	47
September	232	88	116	82	53	30	37	44
October	295	40	130	71	96	51	66	46
Total	816	322	412	260	279	173	264	283

Table 44. Number of fish caught by month in vegetated and non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

Month	St. Clair River				Detroit River			
	Vegetated		Non-vegetated		Vegetated		Non-vegetated	
	1983	1984	1983	1984	1983	1984	1983	1984
May	24	7	23	3	32	8	50	120
June	86	109	32	60	18	56	50	26
July	179	78	111	44	80	28	61	47
September	232	88	116	82	53	30	37	44
October	295	40	130	71	96	51	66	46
Total	816	322	412	260	279	173	264	283

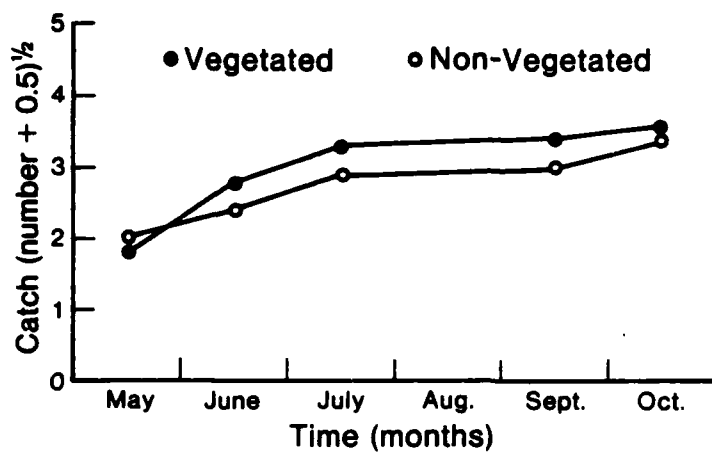


Figure 17. Mean monthly catch (square root of mean catch + 0.5) of fishes in vegetated and non-vegetated areas.

Table 45. Mean number of yellow perch collected by year, month, and in vegetated (V) and non-vegetated (N) in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	<u>17.5</u> 1983	<u>3.5</u> 1984	<u>28.1</u> Oct.	<u>24.3</u> Sep.	0.4 July	0.0 May	0.0 June	<u>13.7</u> (V)	<u>7.4</u> (N)
Fawn Island	<u>9.9</u> 1983	<u>6.0</u> 1984	<u>14.4</u> July	<u>11.5</u> Sep.	7.9 June	6.3 Oct.	0.0 May	<u>15.8</u> (V)	<u>2.3</u> (N)
Russell Island	<u>9.1</u> 1983	<u>2.9</u> 1984	<u>17.0</u> July	<u>5.4</u> Sep.	<u>4.8</u> Oct.	2.3 June	0.8 May	<u>7.2</u> (V)	<u>4.7</u> (N)
Belle Isle	<u>6.2</u> 1983	<u>1.8</u> 1984	<u>9.8</u> Oct.	<u>4.9</u> July	<u>2.9</u> Sep.	1.9 May	0.8 June	<u>4.4</u> (V)	<u>3.7</u> (N)
Point Hennepin	<u>5.3</u> 1983	<u>3.5</u> 1984	<u>8.5</u> Oct.	<u>7.3</u> July	<u>3.0</u> Sep.	2.4 May	1.0 June	<u>5.5</u> (V)	<u>3.4</u> (N)
Stony Island	<u>1.3</u> 1983	<u>0.3</u> 1984	<u>1.8</u> May	<u>0.9</u> Sep.	0.6 July	0.5 June	0.4 Oct.	<u>1.3</u> (V)	<u>0.5</u> (N)

locations, but the differences were significant only at Stag Island, Russell Island and Belle Isle (Fig. 18). Significantly more yellow perch were caught in nets set in vegetation than in non-vegetated areas at Fawn Island (Table 45); differences were greatest in June, July, and September (Fig. 19).

Rock bass densities were higher in 1983 than 1984, but were significantly higher only at Russell Island and Belle Isle (Table 46). Monthly differences were significant only at Stag and Russell islands, and catches were dominant in either July, September, or October (Table 46). Monthly trends at each location did not differ by year (Fig. 20). Catches of rock bass over all locations did not differ significantly between vegetated and non-vegetated areas (Fig. 21). The total combined catch of the remaining species was higher in 1983 than in 1984 (Table 37); however, more rainbow smelt, channel catfish, white suckers, stonecats, alewives, and walleyes were caught in 1984 than in 1983. Catches of all species were greater in the St. Clair than in the Detroit River except for common carp in 1983 and rock bass, spottail shiners, and white suckers in 1984 (Table 38). Few consistent trends relating abundance of these species to the presence or absence of plants were evident (Table 39), although channel catfish, smallmouth bass, and white suckers were more abundant in both years in non-vegetated areas.

Most of the fish that we caught were adults rather than juveniles, as evidenced by their mean length (Table 37). The only juveniles we captured frequently were yellow perch and rock bass. Although fewer fish were caught in 1984 than in 1983, most were larger in 1984 than in 1983. Total fish biomass was also greater in 1984 than in 1983 (Table 38). Several large white suckers and channel catfish captured in the Detroit River caused the total biomass there to be larger than in the St. Clair River, even though more fish were captured in the St. Clair River.

Total biomass of all species, except rock bass and white sucker, was lower in 1984 than in 1983 (Table 38). The relation between total biomass of most species and their presence in vegetation was strong in 1983 but weak in 1984 (Table 39). Weights of yellow perch, hornyhead chubs, striped shiners, and spottail shiners were higher in vegetated than in non-vegetated areas in 1983, but were about equal in the two types of areas in 1984. A consistent trend over both years was that of the catch of rock bass, channel catfish, smallmouth bass and white suckers being greater in non-vegetated than in vegetated areas. Total weights of fish caught increased from May to October (Table 47). Large monthly differences in biomass between years and rivers resulted from the catch of a few large species such as white sucker, channel catfish and common carp.

Relationship between Fish and Physical Environment

A correlation analysis between fish catch data and environmental variables (water depth, temperature, current velocity, and light transmission) over various combinations of bottom type (silt-clay, sand, rubble), in vegetated and non-vegetated areas resulted in few significant correlations. Yellow perch numbers correlated positively with temperature in two instances, and

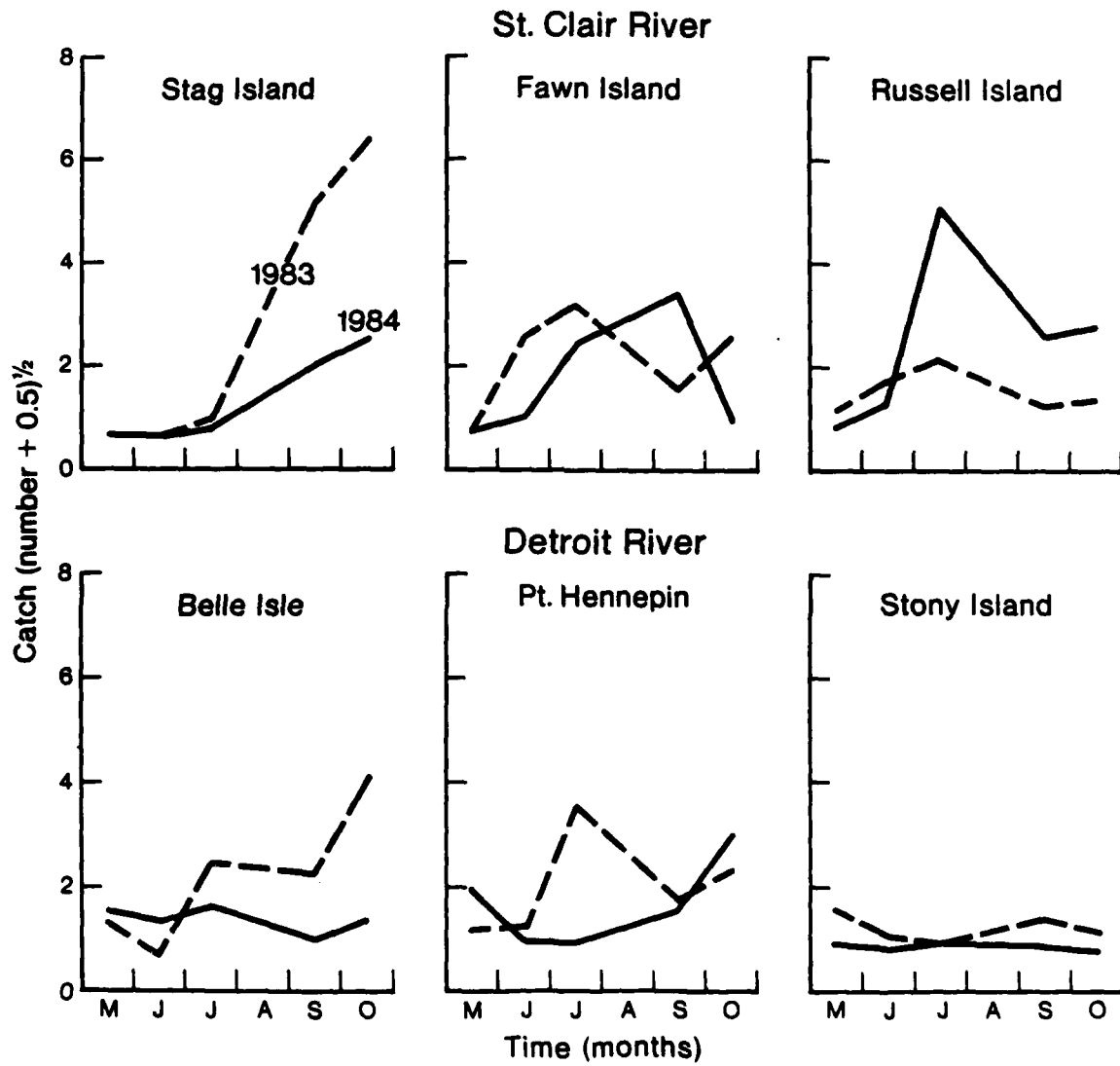


Figure 18. Mean seasonal catch (square root of mean catch + 0.5) of yellow perch at six locations in the SCDRS.

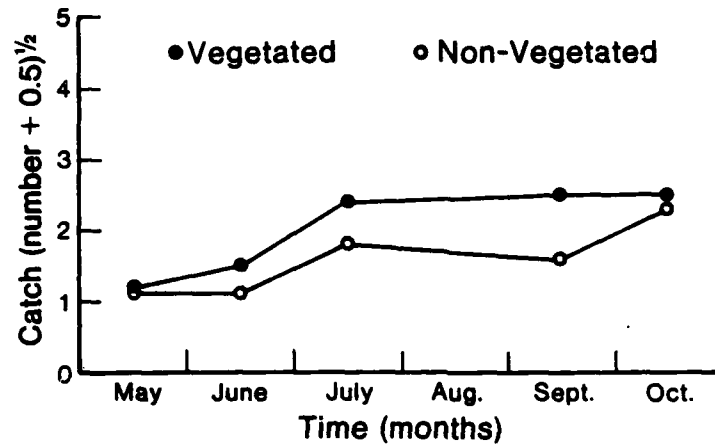


Figure 19. Mean monthly catch (square root of mean catch + 0.5) of yellow perch in vegetated and non-vegetated areas.

Table 46. Mean number of rock bass collected by year, month, and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	<u>1.6</u> <u>1983</u>	<u>1.5</u> <u>1984</u>	<u>4.1</u> <u>Oct.</u>	<u>2.0</u> <u>July</u>	<u>1.0</u> <u>Sep.</u>	<u>0.4</u> <u>June</u>	<u>0.4</u> <u>May</u>	<u>1.8</u> <u>(N)</u>	<u>1.3</u> <u>(V)</u>
Fawn Island	<u>2.1</u> <u>1983</u>	<u>1.2</u> <u>1984</u>	<u>3.6</u> <u>Sep.</u>	<u>2.6</u> <u>July</u>	<u>2.1</u> <u>Oct.</u>	<u>0.0</u> <u>May</u>	<u>0.0</u> <u>June</u>	<u>2.6</u> <u>(V)</u>	<u>1.0</u> <u>(N)</u>
Russell Island	<u>3.8</u> <u>1983</u>	<u>1.7</u> <u>1984</u>	<u>6.0</u> <u>July</u>	<u>4.3</u> <u>Sep.</u>	<u>2.6</u> <u>Oct.</u>	<u>0.9</u> <u>June</u>	<u>0.1</u> <u>May</u>	<u>4.1</u> <u>(N)</u>	<u>1.6</u> <u>(V)</u>
Belle Isle	<u>5.3</u> <u>1984</u>	<u>3.3</u> <u>1983</u>	<u>6.1</u> <u>June</u>	<u>4.8</u> <u>July</u>	<u>4.3</u> <u>Oct.</u>	<u>3.0</u> <u>Sep.</u>	<u>3.5</u> <u>May</u>	<u>4.6</u> <u>(N)</u>	<u>4.0</u> <u>(V)</u>
Point Hennepin	<u>1.1</u> <u>1983</u>	<u>0.6</u> <u>1984</u>	<u>1.8</u> <u>May</u>	<u>0.9</u> <u>July</u>	<u>0.8</u> <u>Oct.</u>	<u>0.8</u> <u>June</u>	<u>0.4</u> <u>Sep.</u>	<u>0.9</u> <u>(V)</u>	<u>0.9</u> <u>(N)</u>
Stony Island	<u>2.6</u> <u>1983</u>	<u>1.9</u> <u>1984</u>	<u>2.8</u> <u>May</u>	<u>2.5</u> <u>June</u>	<u>2.4</u> <u>Oct.</u>	<u>2.0</u> <u>July</u>	<u>1.9</u> <u>Sep.</u>	<u>2.4</u> <u>(N)</u>	<u>2.2</u> <u>(V)</u>

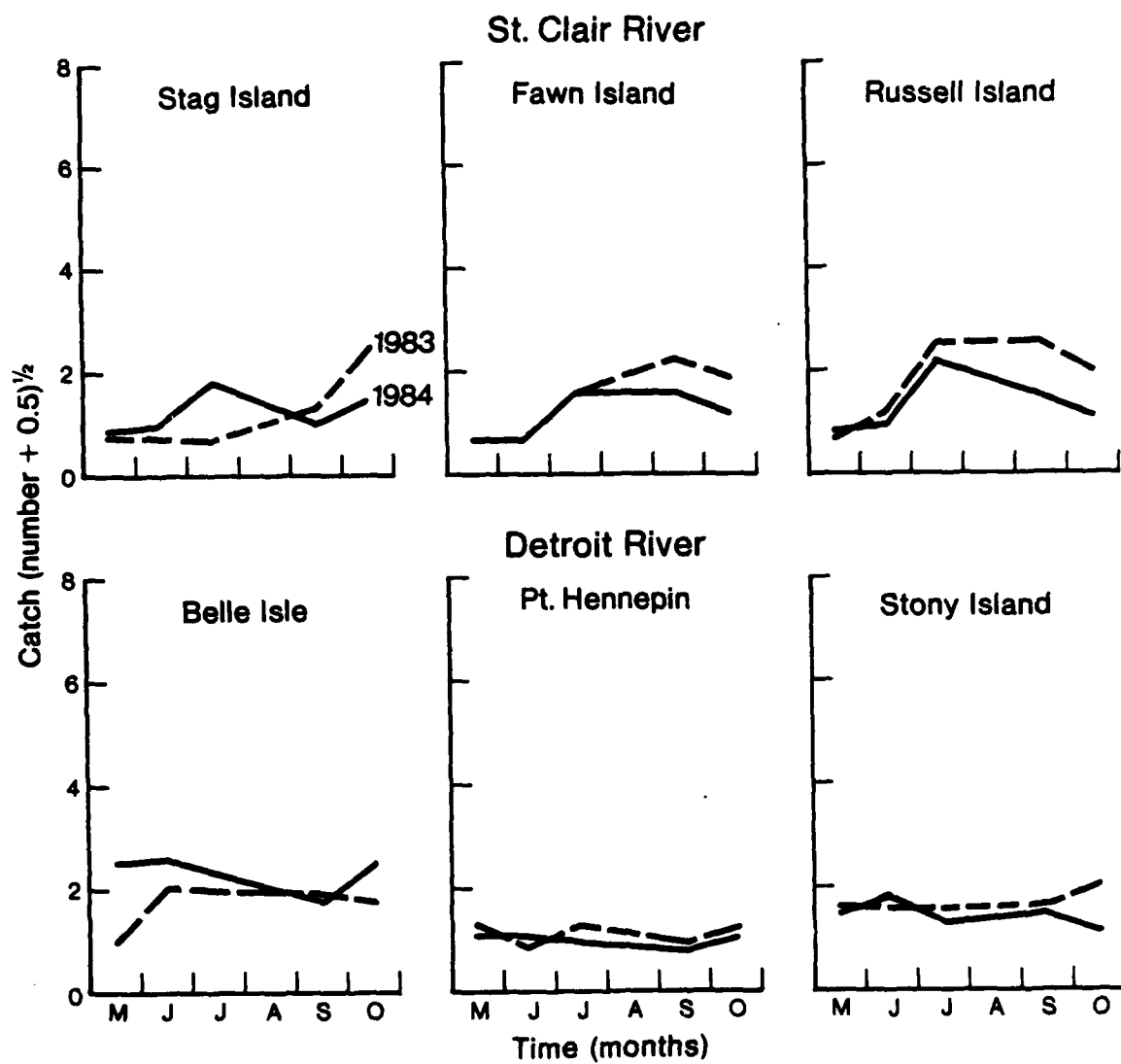


Figure 20. Mean seasonal catch (square root of mean catch + 0.5) of rock bass at six locations in the SCDRS.

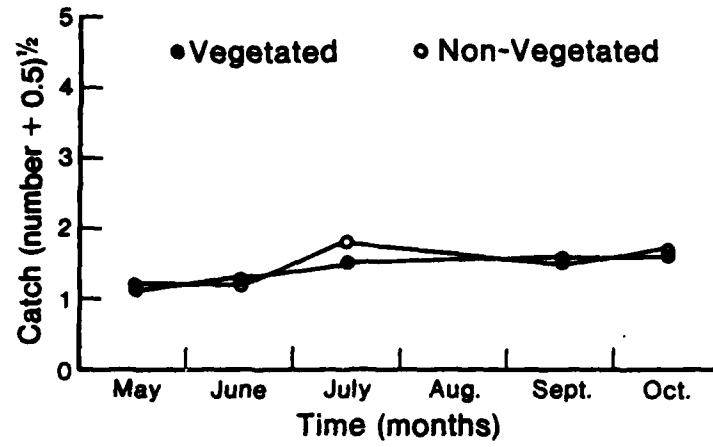


Figure 21. Mean monthly catch (square root of mean catch + 0.5) of rock bass in vegetated and non-vegetated areas.

Table 47. Total weights of common fishes collected in the St. Clair and Detroit rivers in May-October, 1983 and 1984.

Month and species	St. Clair River		Detroit River	
	1983	1984	1983	1984
May				
Rainbow smelt	296	0	82	0
Spottail shiner	200	0	145	32
White sucker	840	0	0	46030
Rock bass	6	848	1618	4477
Yellow perch	6	82	750	827
Stonecat	0	0	220	298
Walleye	0	0	0	1660
Golden redhorse	0	1200	0	0
June				
Yellow perch	736	719	226	521
Striped shiner	197	0	0	0
Hornyhead chub	233	0	0	40
Rainbow smelt	72	1260	0	0
Rock bass	478	872	1910	3744
Trout-perch	10	24	0	0
Spottail shiner	0	14	102	49
White perch	0	0	435	0
White bass	0	0	1227	470
Walleye	0	762	0	0
Stonecat	0	0	54	2428
Bowfin	1400	0	0	0
White sucker	840	0	0	0
Common carp	0	0	4700	0
Black redhorse	0	0	900	0
Bigmouth buffalo	0	0	800	0
Freshwater drum	0	0	680	0
July				
Yellow perch	5516	2685	2187	939
Hornyhead chub	944	149	144	12
Rock bass	3596	6647	2838	1271
Alewife	31	0	0	16
Pumpkinseed	60	0	0	224
Spottail shiner	9	0	77	46
Channel catfish	0	0	1770	1582
Black redhorse	0	0	530	652
Smallmouth bass	0	1944	0	0
Common carp	0	0	0	5100
Walleye	0	0	0	890
September				
Yellow perch	4594	3660	1041	543
Rock bass	3887	2510	1049	2246
Hornyhead chub	616	41	12	46
Smallmouth bass	309	0	0	0
Spottail shiner	206	8	33	0
White sucker	84	0	0	0
Northern pike	1500	1700	0	0
Black crappie	120	352	0	0
Pumpkinseed	14	100	200	0
Channel catfish	0	0	7704	25484
Common carp	0	0	3024	0
Stonecat	0	0	268	250
Black redhorse	0	2722	537	1020
Alewife	0	174	0	0
Walleye	0	680	0	0
Golden redhorse	0	0	1582	0
Freshwater drum	0	630	0	0
Brown bullhead	0	0	0	1462
Rainbow trout	0	258	0	0
October				
Brown bullhead	0	0	468	0
Yellow perch	7539	3040	1927	2321
Hornyhead chub	1064	446	62	32
Rock bass	3141	1907	1856	1601
Striped shiner	608	0	0	0
Black crappie	720	0	350	12
White sucker	51	6547	100	0
Spottail shiner	50	0	0	8
Smallmouth bass	14	0	51	38
Common carp	2700	0	4100	0
Stonecat	0	0	842	912
Channel catfish	0	0	6984	2122
Northern pike	0	0	2000	0
Walleye	0	0	0	1100
American eel	0	0	0	300

rock bass numbers correlated negatively with current velocities in four instances and positively with temperature in two instances. Total number of species and total weight had several positive associations with temperature. Associations with temperature were most common and those with current velocities the least common. The substrate with which the four species were most commonly associated was sandy, with or without vegetation.

For a summary analysis, we determined mean catch and weight of all species combined, total number of species collected, mean catch of yellow perch, rock bass, hornyhead chubs, and spottail shiners associated with six sediment-vegetation combinations. The highest and lowest catches and diversity (number of species) were then listed with the various sediment-vegetation combinations (Table 48). For example, the highest mean catch of hornyhead chubs per net set was highest in sandy areas in vegetation and lowest in non-vegetated rubble areas. We also found that low current velocities were associated with fine sediments and faster currents with coarse material. Vegetation tended to be in areas with slower currents. Yellow perch were collected most often in vegetation, regardless of sediment type; rock bass were taken over rubble without regard to vegetative cover; and hornyhead chubs and spottail shiners were most often caught over fine sediments in vegetated areas.

DISCUSSION

DISTRIBUTION AND ABUNDANCE OF MACROZOOBENTHOS

The number of taxa of macrozoobenthos listed in this study (160) exceeded that in any work on SCDRS, including that of Hiltunen (1980), Hiltunen and Manny (1982), Ontario Ministry of the Environment (1979), Thornley and Hamdy (1984), and Thornley (1985). The number of such taxa reported for any aquatic system depends primarily on the level of taxonomic treatment and the timing and extent of the sampling program. In the present study, we attempted to identify most specimens at least to genus (which potentially lengthened our list relative to those in the other published works), but we also limited our sampling to near-channel areas and to spring and fall (which potentially shortened the list). Our list (Appendix C) was also made somewhat longer than those in earlier works by the inclusion of Copepoda and Cladocera. However, our list might have exceeded 300 species, if we had identified all specimens to species, particularly within the Chironomidae, Ephemeroptera, Trichoptera, Odonata, and Oligochaeta, and added the other remaining taxa.

Our collections contained all of the major taxa listed in past studies in SCDRS but did not include several less abundant taxa such as Crangonyx, Dolichopodidae (Hiltunen 1980), and Pseudocleon (Ontario Ministry of the Environment 1979). In addition, we collected several common chironomid genera (Robackia, Chernoskia, and Lopescladius) that had not been reported from the system. These chironomids were common in the less productive sand-gravel sediments and their abundance may have been underestimated because their thin body form and small size allowed them to escape through the sieve (this is a common problem

Table 48. Fish catches and associated environmental conditions in the St. Clair and Detroit rivers in 1983-1984.

Physical characteristics and catch	Vegetation					
	Absent			Present		
Bottom type	Silt-clay	Sand	Rubble	Silt-clay	Sand	Rubble
Mean depth (ft)	4.3	4.0	5.0	4.4	4.0	4.7
Mean current (ft/s)	0.6	1.1	1.1	0.4	1.1	1.1
Catch						
Mean wt, all species		Lowest	Highest			
Mean catch, all species					Highest	Lowest
Diversity		Lowest				Highest
Catch of hornyhead chub			Lowest		Highest	
Catch of yellow perch			Lowest		Highest	
Catch of spottail shiner		Lowest			Highest	
Catch of rock bass					Lowest	Highest

with "rare" taxa, which often are merely not adequately sampled).

Comparison of zoobenthos diversity in large river systems is difficult because taxonomic detail is usually inadequate. The following studies are exceptions. Barton (1980) collected 114 taxa of benthic macroinvertebrates from the Athabasca River in northern Alberta, Canada. Hudson and Nichols (In Press) recorded 206 taxa from the Savannah River, South Carolina-Georgia. The list of 334 taxa from the wave-zone habitat (0 to 2-m depth zone) of the exposed shores of the Canadian portion of the Great Lakes (Barton and Hynes 1978) surpassed that for SCDRS. Although several taxonomic groups (e.g. oligochaetes, chironomids) were treated at different taxonomic levels in the two studies, the overall similarity was striking. The higher diversities of mayflies and stoneflies in the wave-zone and clams and leeches in SCDRS are noteworthy exceptions. Barton (1980) pointed out the greater diversity of sand-dwelling animals in rivers connecting ancient bodies of water with waveswept shores, such as those of Lake Baikal, Black Sea, and Caspian Sea, and stated that there are no ecological equivalents in glaciated North America. Barton used mollusks and malacostracans as examples of relict fauna not found in glaciated North America, but SCDRS may be an exception because both groups are well represented.

Variability in type of gear and sieve size, plus the great seasonal variability in numbers of small individuals or instars, makes the value of numerical comparisons of abundance between investigations dubious. This becomes immediately obvious when one realizes that our densities were at least 10 times higher than those reported by Thornley (1985) for SCDRS. Some of the differences may reflect an increase in macrozoobenthos numbers and diversity over time as a result of pollution abatement measures that occurred in the 1960's and 1970's. However, differences in the amount and distribution of sampling effort and in sampling and processing techniques all probably contributed to the difference--which points out clearly the need for standardization. Other gross differences in density between areas may reflect differences in productivity. Barton and Lock (1979) suggested an average density of benthic organisms of about 2,000/m² in the Athabasca River, as well as many other streams. Barton and Smith (1984) provided estimates of total invertebrates for a variety of rivers in the world that ranged from 17/m² in the Danube River (Bulgaria) to 40,000/m² in certain areas of the Athabasca River. Spring and fall densities we measured in SCDRS averaged 24,000/m². Assuming a sampling efficiency of only about 50% (Barton and Smith 1984) due to the large mesh size of the sieves we used, the densities in SCDRS may have exceeded those in most rivers of the world.

However, one can usually make confident quantitative comparisons of biomass, which are affected less from presence or absence of large numbers of small individuals, and by comparing selected species such as Hexagenia. Biomass estimates for large rivers (Barton and Smith 1984) ranged from 0.1 to 8.6 g/m² and our value of 1.33 g/m² for the SCDRS equals or exceeds values for six of the eight rivers listed. The mean biomass for SCDRS is higher than most

listed for rivers below impoundments (Walburg et al. 1983), and is nearly identical to that reported for the St. Lawrence River (1.4 g/m^2) by Mills et al. (1981). Densities of *Hexagenia* in spring in SCDRS ($235/\text{m}^2$) were higher than those reported by Hudson and Swanson (1972) for a Missouri River reservoir ($140/\text{m}^2$), but somewhat lower than those reported by Hiltunen and Schloesser (1983) for the St. Marys River ($361/\text{m}^2$). Densities of *Hexagenia* at transect VI in the St. Clair River in October 1984, which ranged from 3,600 to $6,730/\text{m}^2$, are among the highest densities reported in the literature, and exceed the maximum density ($50/\text{m}^2$) recorded by Thornley (1985) in the St. Clair River in 1968 and 1977.

Large within-year and between-year variations in abundance of macrozoobenthos can typically be traced to life cycle patterns. Most invertebrates complete several generations a year, causing population structure to shift in a matter of weeks from one dominated by large mature individuals to one of mainly small, immature specimens. Because density of most taxa in SCDRS is higher in fall, we might assume that age structure in fall is dominated by young individuals that are subject to overwinter mortality. In contrast, populations with maximum densities in spring may be cold-adapted forms that overwinter with little mortality or grow at low temperatures, and were recruited to our No. 30 mesh screen by May. Several genera of chironomids have this adaptation to low temperature. Of the 24 taxa we analyzed in detail, 19 had maximum densities during the same month in successive years, and differences in densities between years were usually less than 30%. *Hydra*, *Oligochaeta*, *Manayunkia*, Chironomidae, and Acarina were the only taxa with large, erratic seasonal and yearly changes in density. Hiltunen (1980) noted large fluxes between years in the oligochaete population in the St. Clair River. These large changes in density were probably due to the life history of oligochaetes, to differences in behavior of the multiple species in this large group or both.

Of the abundant taxa, 75% were most numerous at the shallower off-channel stations. The relative difference in densities between off-channel and channel stations is probably a true reflection of the life history requirements of each taxon, whereas the absolute difference between stations is probably a sampling artifact. Channel stations in particular are characterized by higher current velocity and coarser sediments. The Ponar dredge is inefficient in fast currents, and in the hard clay or rubble substrate, that is characteristic of the channel bank stations. Many taxa (e.g. Gastropoda, Diptera, Trichoptera, and Ephemeroptera) may be abundant in these inadequately sampled areas with fast currents and hard substrate.

Sediment particle size and contaminant distribution basically determine the composition and density of the benthic community in SCDRS. The St. Clair River, with its wider range of sediment size and diversity of macrophytes is dominated by aquatic insects, amphipods, and snails that are intolerant of pollution. Our samples were collected mainly along the U.S. shoreline, which is less contaminated than Canadian nearshore waters (Kauss and Hamdy 1985). The diversity of macrozoobenthos in the Detroit River near Belle Isle is similar to that in the St. Clair River. The headwater areas of both rivers support large populations of the filter-feeding caddisflies *Cheumatopsyche* and

Hydropsyche. Densities of these two genera are higher in the Detroit River than in the St. Clair River, probably because seston levels are higher in Lake St. Clair than in Lake Huron (Kauss and Hamdy 1985). Concentrations of contaminants were moderately high in the lower Detroit River (Transect XVIII) but were low at stations along Grosse Ile (Limnotech, Inc. 1985). The bottom fauna near transect XVIII was dominated by oligochaetes, and the fine sediments were contaminated with oil. The variety of invertebrates was greater but the densities were lower in the gravel-cobble substrate of transects XIX-XXI than at transects in the upper Detroit River. The densities of most of the more primitive invertebrates, such as Oligochaeta, Nematoda, Nemertinea, and Manayunkia, were highest in the Detroit River. The transects in Lake St. Clair were devoid of macrophytes but the substrate was covered with Cladophora in October. The lake community was simple, consisting of Hexagenia, Oecetis, Sphaeriidae, Ostracoda, and Nematoda, and was typical of any healthy, lentic community living on a bottom composed of fine sediments.

Sand, a dominant substrate in many large rivers, is unsuitable habitat for many benthic invertebrates (Barton and Lock 1979; Berner 1951). In the St. Clair, Detroit, and Athabasca rivers, dominant sediments range from sand in the Athabasca River to mud in the Detroit River (Table 49). The constant flow, low turbidity, and luxuriant plant growth in SCDRS must be major factors in stabilizing and incorporating finer sediments into what would probably be a typical river and sand habitat. Although current velocities are relatively high in SCDRS, most of the littoral substrates contain relatively high percentages of silt and clay that support large populations of insects and crustaceans. This situation may be analogous to that in the Volga and Angara rivers in Russia, which also support high biomasses of amphipods and oligochaetes (Barton and Smith 1984). The Athabasca River, in contrast, is turbid; the substrate is shifting sand that contains little silt or clay; and the biomass of macroinvertebrates is relatively low (Barton 1980).

In summary, the high abundance and diversity of macrozoobenthos in SCDRS is due to the quality and diversity of the habitat: (1) high-quality water enters SCDRS from Lake Huron, (2) a wide variety of stable sediments are available, ranging from cohesive clay to cobble, (3) current velocities vary widely, ranging from 0 to 6 ft/s, and (4) submersed and emergent macrophytes are diverse and abundant.

DISTRIBUTION AND ABUNDANCE OF SUBMERSED MACROPHYTES

The submersed macrophyte community in the St. Clair and Detroit rivers changed little from 1983 to 1984. Frequency of occurrence of individual taxa between years varied by $\leq 7\%$ in each river and was usually $< 10\%$ at each location. The few large discrepancies could be attributed to taxonomic or sampling problems. For example, at Point Hennepin, the occurrence of narrow-leaf Potamogeton spp. in June was 22% lower in 1984 than in 1983, but that of P. zosteriformis was 39% higher. Inasmuch as these two taxa superficially resemble each other early in the season, those collected in 1984 may have been Potamogeton spp. and those collected in 1983 may have been P. zosteriformis.

Table 49. Sediment composition (% of total) in three large rivers in North America.

Sediment	River		
	Athabasca (Alberta, Canada)	St. Clair	Detroit
Mud	8	17	56
Muddy sand	28	49	23
Sand	48	4	2
Gravel	16	30	18

The abundance of *P. richardsonii* in the June collections at Point Hennepin was 24% higher in 1984 than in 1983. The increase was due in part to the fact that a large bed of *P. richardsonii* in deep water was discovered and sampled routinely only after it broke the surface in July-August 1983.

The macrophyte community in SCDRS has remained stable since at least 1978. Schloesser and Manny (1982) collected one more taxon (19) in 1978 than we did and recorded the same dominant taxa by area (*Chara* spp. in the St. Clair River and *Vallisneria americana* in the Detroit River). In our study, maximum coverage averaged 53% over the six locations and varied less than 12% between years. Schloesser and Manny (1982) found submersed macrophytes at 68% of their stations, none of which were located in the shipping channel. Because a portion of our sampling grid extended into the shipping channel, where few plants lived, our estimates of percent cover on the shoals would have to be adjusted upward to be comparable with theirs. If that adjustment was made, our results would be similar to theirs.

The percent occurrence of taxa at our island locations also varied from that given by Schloesser and Manny (1982), who sampled most extensively in littoral waters adjacent to the Canadian and U.S. mainland (Table 50). The occurrences of *V. americana*, *P. richardsonii*, *Myriophyllum spicatum*, and *Elodea canadensis* were lower at our St. Clair River island locations than reported by Schloesser and Manny (1982) at their mainland stations. *Potamogeton gramineus* and particularly *Potamogeton* spp. were more abundant at our locations than at their adjacent mainland locations. In the Detroit River, *Potamogeton* spp., *V. americana*, *P. richardsonii*, and Characeae were more common at our sampling locations, whereas *Heteranthera dubia* was more common at their mainland locations. Some of these differences may reflect design and sampling differences, but it appears that at least *Potamogeton* spp. are more common in shoal areas at the head and side of islands in SCDRS than along the U.S. and Canadian mainland shorelines. The factor most affecting the distribution of aquatic macrophytes is bottom type, which is largely determined by current velocity (Westlake 1975). Current velocities at the heads of islands in SCDRS are higher than those along the mainland shore; this difference may affect soil textures and the ability of various species to anchor in a given sediment (Ozimek et al. 1976).

Extensive monospecific stands of submersed macrophytes were largely lacking at the six sampling locations in SCDRS. Large stands of *Chara* spp. at Fawn Island and *Vallisneria americana* at Point Hennepin were the exceptions. The average number of taxa per grab was 2.5 over all locations and was highest (3.3) at Belle Isle. Crowder et al. (1977) found a mean value of 5.5 taxa in Lake Opinicon, Ontario, but their sampling area (25-cm-square quadrant) was somewhat larger than ours; Liston and McNabb (1986) collected about 2 taxa per Ponar grab in the St. Marys River.

Schloesser and Manny (1982) found that the areal distribution of macrophytes was more limited in the Detroit River than in the St. Clair River, but wrote that the proportion of plant beds with high, medium, and low densities was

Table 50. Percent frequency of occurrence of dominant submersed macrophytes collected in littoral mainland areas (Schloesser and Manny 1982) and on island shoals (present study) in the St. Clair and Detroit rivers.

Taxon	<u>St. Clair River</u>		<u>Detroit River</u>	
	Mainland	Island shoals	Mainland	Island shoals
<u>Vallisneria americana</u>	28	4	49	70
Characeae	68	74	9	23
<u>Potamogeton richardsonii</u>	49	32	4	21
<u>Myriophyllum spicatum</u>	28	8	13	20
<u>Elodea canadensis</u>	36	25	7	7
<u>Heteranthera dubia</u>	1	1	31	7
<u>Potamogeton</u> spp.	24	54	3	30
<u>Najas flexilis</u>	1	5	5	5
<u>Potamogeton gramineus</u>	11	24	3	5

similar in the two rivers. We found similar bed coverage between rivers and a 12% lower biomass in the Detroit River. Schloesser and Manny (1982) reported that maximum seasonal biomass over the entire system ranged from 118 to 427 g/m². Our September biomass estimates ranged from 93 to 265 g/m² over the six locations, and the highest seasonal biomass was 382 g/m², in block 6 at Stony Island.

Maximum biomass estimates for SCDRS made by Schloesser and Manny (1982) and by us were at the lower end of a range of 110-520 g/m² reported by Westlake (1963) for aquatic macrophyte stands in rivers at temperate latitudes. The mean biomass of 176 g/m² in SCDRS in September is similar to maximum values of 150 g/m² measured in the shallow littoral area of the St. Lawrence River (Cooley 1978) and 170 g/m² in the Red Cedar River, Michigan (Ball and Bahr 1975). In the Red Cedar River, several years of low discharge were followed by several years of record high flows that scoured and eliminated most of the macrophytes. Scouring due to extended high flows does not occur in SCDRS, and once macrophyte beds become established, it seems likely that only dredging or filling activities would physically remove them. The spring ice jam of 1984 did not scour beds, however the soft frazzle ice which typified this jam may not be an effective scouring agent.

Maximum summer biomass of submersed macrophytes in SCDRS is probably not related to nutrient availability. Nitrogen (200-400 µg/l) and phosphorus (2-30 µg/l) in the system were near the concentrations (100-200 µg/l and 20-30 µg/l, respectively) that Westlake (1975) believed to be sufficient to support optimum growth; the exception may be in the St. Clair River, where mean phosphorus levels were reported to be only 12 µg/l (Ontario Ministry of the Environment 1979).

The seasonal growth patterns we found agreed largely with those reported by Schloesser et al. (1985). We found a higher biomass in September at every location, although biomass values for September were not significantly different from those for July-August at Belle Isle and Point Hennepin. Of the four locations we sampled in common, we were in agreement at Russell Island (October maximum), Belle Isle (August-September maximum), and Grosse Ile (August maximum). At Stag Island Schloesser et al. (1985) found *Potamogeton* spp. peaked in July and *P. richardsonii* in August; we found proportional increases in both taxa from June to September. Brown (1983) also recorded maximum biomass in Anchor Bay between August and November. The growing season for aquatic angiosperms is restricted to periods when water temperatures exceed 50°F (Haag 1979, Kunii 1981). The ice jam in the St. Clair River, in spring 1984 delayed the rise of water temperatures to 50°F by about 10 days but this delay did not affect the date on which maximum seasonal biomass was reached.

In the Detroit River, turbidity may reduce light penetration and prevent the development of certain species of submersed macrophytes in the deeper portions of the littoral area. It is a general view that aquatic macrophytes extend to depths receiving only 1-4% of surface light (Sculthorpe 1967), although a limit of 15% was observed by Bodkin et al. (1980). Chambers and Kalff (1985) found that angiosperms were limited to depths where an average of

at least 21% of the photosynthetically active radiation incident on the water surface was received over the growing season. The average light transmission to the bottom of the littoral area in the Detroit River (16%) is near the lower limit for plant growth; consequently any increase in turbidity in the Detroit River during the early growing season may eliminate some of the more light-sensitive species such as P. crispus and P. pectinatus (Sheldon and Boylen 1977).

The reduction of current velocity by vegetation in a lotic system is well documented (Gregg and Rose 1982; Nowell and Jumars 1984), and such a reduction clearly may allow small fish to live in areas where current velocity would otherwise exclude them. In addition, vegetation harbors benthic invertebrate food organisms and provides cover for juvenile fishes (Werner et al. 1983).

Macrophytes affect invertebrate community structure and abundance both directly and indirectly. Submersed macrophytes, by modifying the current, influence sediment deposition and thus influence the composition of invertebrate species on the bottom. Macrophytes create heterogeneity and can increase habitable surface area over a square meter of bottom by a factor of 2 (Brown et al. 1986). The most important function served by submersed macrophytes may be provided in fall, when the plants die and the plant material is released in a "pulse" in a form that can be rapidly used by aquatic detritivores (Hill and Webster 1983). In the New River, Virginia, this pulse accounted for 13.1% of the total annual organic input (including periphyton and allochthonous inputs) to the river and for 28% of the input generated within the middle reach of the stream (Hill and Webster 1983). The organic input provided by submersed plants is probably much greater in the SCDRS than in rivers such as the New River because little other organic matter that enters the SCDRS is derived from the watershed with the exception of storm sewers in the city of Detroit.

The taxonomic composition and abundance of aquatic macrophytes in SCDRS probably reflect the stability of flow more than any other environmental variable. The lack of spates provides long-term stability to the system. The pattern of distribution in the system reflects physiological and morphological adaptations of the macrophytes to light and current and results in communities that are fairly predictable. These developing beds then modify the current and light, thus allowing additional species to exploit this new microhabitat. Because competition and space are limited, this development is less predictable and prevents recognition of consistent associations between species. Differences in seasonal growth of different taxa further complicate the system, but they are predictable and further increase stability.

DISTRIBUTION AND ABUNDANCE OF FISH

Most species of fish in the vicinity of island shoals in the St. Clair and Detroit rivers where our collections were made are either rare, transient species, or prefer other areas of the river. Our small hoop nets collected mostly yellow perch and rock bass, along with 34 other species. Larger trap nets (77 m long lead, 1.8 m deep heart) set by the Michigan Department of

Natural Resources (Haas et al. 1986) at the outer fringes of the shoal areas also collected mainly adult yellow perch and rock bass, along with 46 other species. Cosentino (1983) found 14 species commonly in a marsh-bay complex in the St. Clair River near Russell Island; however, only 6 of these were collected in our study. Island shoals, because of their openness and vulnerability to environmental extremes, may typically have fish communities dominated by only a few species.

It is also possible that the community of fish inhabiting the island shoals was not adequately sampled by our gear. This inadequacy would account for both variation in species caught and the large variation in our spatial and temporal catch rates. Hoop nets were chosen as our gear because of the difficulty of sampling in areas of high current. Although hoop nets tend to yield a lower catch per unit of effort and a more variable catch than other gears (Pennington et al. 1980), and are not equally efficient for all species (Kallemeyn and Novotny 1977), they may be one of the few gears that can be fished quantitatively in flowing water. And though electroshocking is not recommended for sampling in deep, turbid, high-gradient streams (Larimore and Garrels 1985), two-boat electroshocking might prove to be effective in the riverine portions of SCDRS. More effort and the use of other sampling gear, would have increased the size and diversity of our catch, but probably would not have contradicted our finding that yellow perch and rock bass are the permanent, dominant residents of the littoral fish community of these island shoals. Larger species that may belong to this community, but that may not have been adequately captured by our gear are smallmouth bass in the St. Clair River and channel catfish and stonecat in the Detroit River. We cannot speculate on the composition of fish shorter than 100 mm in littoral communities because of the relatively large mesh size (1-inch stretched measure) of the netting from which the body of our hoop nets were constructed.

A major objective of this study was to determine if fish used plant beds. We believe that the higher catches observed in plant beds than in non-vegetated areas may reflect species-specific (yellow perch, hornyhead chub, spottail shiner) tendencies, which may also depend on location (e.g. at Fawn Island fish abundance and the presence of plants were significantly related). These tendencies were more strongly expressed in 1983 than 1984, and were correlated with season. The occurrence of significant trends could have been masked by various factors. Early in the season it was difficult to find well-defined, high-profile plant beds extending substantial distances into the water column; consequently we usually selected low profile Chara spp. beds as the vegetated areas in which we set our nets. Later in the season, high high-profile vegetation was so lush in some areas that it was difficult to find non-vegetated areas. Both situations could result in catches that might not support the well-documented preference of fish for structured environments of the sort provided by high profile vegetation (Brouha and von Geldern 1979; Prince and Maughan 1979; Helfman 1979; Paxton and Stevenson 1979). The poorly defined relationship between fish catch and vegetation in 1984 could be due to the rate of development of vegetation in spring 1984, which was generally lower and also varied more widely from location to location in 1984 than in 1983.

Overall, after considering the above variability, we believe that vegetation was related to abundance of three of the four common species inhabiting the island shoals. Submersed vegetation was also the only underwater structure in SCDRS, because the low gradient and navigation-related maintenance eliminate structure such as boulders and snags common to other riverine systems. Thus the submersed macrophyte beds are of considerable importance to fish production in SCDRS.

CHARACTERIZATION OF SCDRS HABITATS

Because of the number and variety of the data, a site-by-site treatment of major taxa might facilitate impact analysis on a habitat basis. Table 51 shows a geographic breakdown of the dominant taxa of macrozoobenthos, submersed macrophytes, and fish found in SCDRS. The benthic transect numbers I-XXI are used as locators. With the following exceptions, sampling locations for fish and macrophytes were also sampling locations (transects) for macrozoobenthos: Transect XVIII at Point Hennepin, at the tip of Grosse Ile, was the macrozoobenthos sampling location closest to the Mamajuda Island Shoals plant and fish sampling locations; and transect XXI was several thousand feet upstream from the fish and macrophyte location at Stony Island. Vegetation at each of the transects was usually at the shallower, off-channel station, except at Stag Island, where the benthic samples were taken at the head of the island in an area devoid of plants.

Physical differences in the rivers can serve as a basis for this characterization. The St. Clair River can be divided into four types of shallow-water habitat (< 12 ft deep), each with a slightly different faunal composition: the entrance into the St. Clair River, the mainland shore in the upper river, the shoreline along the delta islands, and the island shoals. Transect I typifies the headwaters of the St. Clair River. In this area current velocities are fairly high, the substrate is composed of sand, and macrophytes are lacking. The fauna was composed of chironomids having special adaptations (thin, streamlined bodies) for living in sand; planktonic copepods and cladocerans; and the ubiquitous oligochaetes (Table 51). Biomass and density are low.

Transect II represents the only mainland littoral area sampled in the upper St. Clair River. This narrow band between the shoreline and the 12-ft depth contour has a mean width of about 170 ft, runs along both mainland shorelines, and covers 1157 acres or 14% of the total area of the upper St. Clair River. Sediments along this narrow band range from sand-silt in protected areas and sand, gravel, or cohesive clays in plant beds along the shipping channel. The texture of superficial sediments at any given site depends on bed material and current velocity, which in turn is determined by river width and channel configuration. The fauna at transect II is characterized by the high standing stocks of net-spinning caddisflies (Table 51), which presumably eat the seston coming from Lake Huron. Farther downstream the seston begins to settle out and the net-spinners are replaced by collector-gatherers such as amphipods and mayflies. Macrozoobenthos biomass along this band is high, probably due to extensive beds of macrophytes dominated by Chara spp., Potamogeton spp., Vallisneria americana, and P. richardsonii. Schloesser and Manny (1982, 1984)

Table S1. Dominant macrozoobenthos, submersed macrophytes, and fishes in the SCORS in 1983-1984. Order of presentation of taxa in table indicates numerical or biomass rank. Transect number, substrate and current velocity values are associated with the macrozoobenthos data. Density (no./m²) and biomass values (g ash-free dry weight/m² for macrozoobenthos; g dry weight/m² for macrophytes) are for all taxa combined^{a/}.

Transect	Dominant substrate		Surface current velocity (ft/s)		Macrozoobenthos			Macrophytes		Fishes
	Off-channel	Channel	Off-channel	Channel	Taxa	Density	Biomass	Macrophytes ^{a/}	Biomass	
I	Sa	Sa	1.7	1.8	Chironomids, cladocerans, copepods, oligochaetes	1,700	0.14	none		
II	Sa Si	Gr	0.7	2.3	Hydra, oligochaetes, chironomids, snails, caddisflies	56,000	1.72	Potamogeton spp. <u>P. richardsonii</u> <u>Vallisneria</u>		
III (Seag Island)	Gr	Gr	1.8	2.1	Hydra, chironomids, oligochaetes, caddisflies, snails	5,200	0.17	Chara Potamogeton spp. <u>P. richardsonii</u>	92	Yellow perch Hornyhead chub Rock bass
IV (Fawn Island)	Sa Si	Sa	1.1	2.5	Hydra, oligochaetes, snails, chironomids, amphipods, clams	24,900	1.28	Chara <u>P. gramineus</u> <u>P. richardsonii</u>	130	Yellow perch Rock bass Hornyhead chub
V (Russell Island)	Sa Si	Gr	1.4	2.8	Hydra, oligochaetes, chironomids, snails, amphipods, mayflies	50,900	1.90	Chara <u>P. gramineus</u> Potamogeton spp.	164	Yellow perch Rock bass Hornyhead chub
VI	Sa Si	Sa Si	0.5	1.2	Hydra, chironomids, oligochaetes, amphipods, mayflies, snails	40,900	2.30	Chara [*] <u>P. richardsonii</u>		
VII [*]	Sa Si	Cl	0.6	1.9	Hydra, oligochaetes, chironomids, snails, amphipods, mayflies	60,800	3.06	Chara [*] <u>P. richardsonii</u>		
VIII	Si Cl	Sa Si	0.2	0.7	Oligochaetes, Hydra, chironomids, Manayunkia, mayflies, amphipods	66,500	1.24	Chara [*] Potamogeton spp.		
IX	Sa Si	Sa Si	0.3	0.4	Oligochaetes, chironomids, Manayunkia, amphipods, Hydra, snails	15,900	0.62	Chara [*]		
X	Sa	Sa Si	0.4	0.4	Oligochaetes, chironomids, Hydra, snails, amphipods, mayflies	11,600	0.48	Chara [*]		
XI	Si Cl	Si Cl	0.5	0.2	Oligochaetes, nematodes, Manayunkia, mayflies, clams, chironomids	14,700	1.38	none		
XII	Si Cl	Si Cl	0.2	0.2	Oligochaetes, mayflies, chironomids, Manayunkia, nematodes, amphipods	7,800	1.46	none		
XIII	Si Cl	Si Cl	0.6	0.5	Oligochaetes, mayflies, chironomids, nematodes, clams, Manayunkia	6,300	1.38	none		
XIV	Sa Gr	Sa Si	0.8	1.2	Oligochaetes, Manayunkia, clams, chironomids, snails, caddisflies	4,600	1.15	<u>Vallisneria</u> [*]		
XV	Sa Cl	Sa Cl	0.7	1.6	Caddisflies, Hydra, oligochaetes, snails, clams, chironomids	9,500	1.18	Chara [*]		
XVI (Belle Isle)	Si	Sa Si	0.1	0.9	Oligochaetes, chironomids, nematodes, Hydra, amphipods, ostracods	19,100	4.52	<u>P. richardsonii</u> <u>Vallisneria</u> <u>Rittallia</u>	106	Rock bass Yellow perch
XVII	Si	Sa Si	0.3	1.4	Manayunkia, oligochaetes, nematodes, copepods, Hydra, chironomids	19,400	1.00	<u>Vallisneria</u> [*] Chara		
XVIII (Point Hannonpin)	Si	Si	0.4	0.9	Oligochaetes, snails, nematodes, nemertines, rhabdocoels, triclads	80,900	1.36	<u>Vallisneria</u> <u>P. richardsonii</u> Potamogeton spp.	73	Yellow perch Rock bass Spottail shiner
XIX	Si Cl	Gr Sa	0.4	1.3	Oligochaetes, Manayunkia, nemertines, nematodes, snails, rhabdocoels	14,800	0.66	<u>Vallisneria</u> [*]		
XX	Co Gr	Sa Cl	0.7	1.9	Oligochaetes, nematodes, nemertines, snails, Hydra, chironomids	10,100	0.34	<u>Heteranthera</u> [*] <u>Vallisneria</u> Potamogeton spp.		
XXI (Stony Island)	Sa Si	Gr Cl	0.8	1.1	Oligochaetes, Manayunkia, nematodes, Hydra, nemertines, clams	12,900	0.62	<u>Vallisneria</u> <u>Myriophyllum</u> <u>Heteranthera</u>	163	Rock bass Channel catfish Stonerat

^{a/} Cl = clay, Si = silt, Sa = sand, Gr = gravel, Co = cobble; * Based on visual estimates of plants present in samples of macrozoobenthos.

estimated that the standing crop of submersed macrophytes along the mainland shorelines is 60-160 g/m².

Transects III, IV, and V are associated with island shoals. Between the shoreline and the 12-ft depth contour, these three island shoals, plus the St. Clair Middle Ground and a small shoal just above Fawn Island, cover 429 acres and represent 5% of the total surface area of the upper St. Clair River. Our sampling over most of this area indicated that the percent coverage by submersed macrophytes in this shallow water was about 60-70%. However, the shoals at the head of Stag Island are devoid of plants, current velocities are high, the substrate is gravel, and benthos standing crop is low. Plant coverage over the rest of Stag Island is also low (20%), and where plants are present standing crop is also low (< 100 g/m²). Although current velocities are high at the head of Fawn and Russell islands, plants such as P. gramineus, P. richardsonii, and Potamogeton spp. ring the outer edge of the shoals, and these species along with Chara spp. cover almost 70% of the rest of the shoals. Macrozoobenthos and plant biomass are high at both Fawn and Russell islands (Table 51). Dominant taxa of macrozoobenthos, aquatic plants, and fish are similar between sites. Seston concentrations are capable of sustaining relatively high levels of caddisflies in gravel substrates at Stag Island, but not at Russell Island.

Transects VI - X are along the shoreline of the South Channel and St. Clair Cutoff Channel in the St. Clair River delta area. A band of shallow water extends an average of 374 ft from the shoreline to the 12-ft depth contour along both the U.S. and Canadian sides of the river. This area covers 905 acres and represents 50% of the total surface area of this portion of the river. Currents were low (< 1.0 ft/s) and sediments were dominated by mixtures of silt and sand. Some of the highest biomass values for macrozoobenthos were found at transects VI and VII (Table 51), but biomass and densities declined dramatically along transects nearer to Lake St. Clair. Dominant invertebrate groups were similar between transects, with only minor shifts in order of abundance. High densities of Manayunkia appeared at transect VIII, and oligochaetes replaced Hydra as the dominant taxon on this transect. Chara spp. was the dominant plant on all transects (> 80% of samples) but P. richardsonii was also common at transects VI and VII.

The benthic fauna at all areas sampled in the St. Clair River, except transect I in Lake Huron, was usually dominated by Hydra, oligochaetes, chironomids, gastropods, amphipods, and mayflies. Densities of Hydra were usually highest in October at most transects; however, densities were high in May at transects VI - VIII and X in 1983 but not in 1984. The depth distribution of Hydra is also variable, densities usually being highest in deeper, near-channel areas; in other areas (e.g., transect V) its density peaked in shallow water. The presence of solid substrates such as vegetation or coarse gravel may modify the distribution, regardless of depth. Sand, gravel, and cohesive clay are usually present where current velocities exceed 2 ft/s, and sand and silt where velocities are less than 1 ft/s. Oligochaetes were most common in shallow water in May, and chironomids were common in shallow water in May and

October. Gastropods were most common in October; Amnicola dominated in shallow water and Elimia in deeper water. Densities of amphipods were high in shallow water and Gammarus was the dominant genus. Mayflies do not become abundant until transect IV, perhaps reflecting pollution effects from Sarnia at the head of the river. Hexagenia and Caenis were the most common genera and were densest in the fall; Hexagenia was the more abundant in deepwater and Caenis in shallow water. Ephemera was also common, but distributed evenly over all depths. The Trichoptera were dominated by Cheumatopsyche and Hydropsyche; densities were high only in the upper St. Clair River. Neither genus showed trends in abundance related to water depth. Yellow perch, rock bass, and hornyhead chubs were the dominant fishes except seasonally when rainbow smelt occasionally were the most abundant.

Transects XI - XIII were located in Lake St. Clair in the deepest part of the lake (> 12 ft). Sediments were uniformly fine in the silt-clay class. Aquatic macrophytes were lacking, although sparse stands of Cladophora were evident in October. Benthic invertebrates were not abundant, but biomass was about equal to the system-wide average because the number of large Hexagenia nymphs was high (Table 51). The dominant genus of clams was Pisidium, and the dominant amphipod was Gammarus. Although substrate and current velocities appeared to be uniform among the transects, there were considerable differences in relative abundance of taxa other than oligochaetes.

Transects XIV - XV were in the headwaters of the Detroit River. These two transects differed in substrate, aquatic macrophyte composition, and macrozoobenthos composition (Table 51). Manayunkia was abundant at transect XIV but not abundant at transect XV, and Hydra and caddisflies were more abundant at transect XV. Current velocities were similar, but bed material was different at the two locations. Subtle differences in substrate and the presence or absence of Chara spp. and Vallisneria americana apparently influence the composition of benthic invertebrates more strongly than do current velocities. Macrozoobenthos densities were low but biomass values were near average for the system. Plant biomass values were low, in the 20-90 g/m² range (Schloesser and Manny 1982).

About 18% of the 5,160 total surface acres of the upper Detroit River overlie water less than 12 ft deep. These littoral areas include 272 acres around Belle Isle; 159 acres in the Scott Middle Ground; 472 acres along both shores, where the average width of the littoral band is 150 ft; and about 40 acres at the head of Fighting Island. Composition and density of fauna at transects XVI and XVII are probably only representative of shoals in the vicinity of Belle Isle. Our estimate of the biomass of aquatic macrophytes at Belle Isle (106 g/m²) fell within the range measured by Schloesser and Manny (1982) in this area in 1978; however, they found almost no plants along the narrow band of shallow water along the U. S. mainland shore and only a few plants in areas (Ambassador Bridge and above Fighting Island) along the Canadian shoreline below Belle Isle. At transect XVI, the densities of macrozoobenthos were lower than the average of 25,500/m² for the system, but the biomass was the highest recorded in SCDRS in 1983-84. This high biomass was due in part to the large mussel population in the Belle Isle area. Transect XVII was the only transect

where Manayunkia was numerically dominant. Benthic copepods and ostracods also were among the six most abundant taxa at the two Belle Isle transects. The rock bass was the dominant fish species.

Transects XVIII - XXI in the lower Detroit River cover a variety of habitats ranging from protected areas with fine, oil-contaminated sediments (XVIII) to areas with high current velocities and bedrock substrate (XX). Of the 28,800-acre area of the lower Detroit River, about 82% is less than 12 ft deep. Because of the complexity of the system this area was not divided into mainland, island, or shoal areas. Plant biomass ranged from sparse at Point Hennepin (73 g/m²) to dense at Stony Island (163 g/m²). Schloesser and Manny (1982) reported a similar range of values, including high biomass (150-220 g/m²) on the west side of Grosse Isle, around Celeron Island and the east side of Fighting Island, and generally lower values (60-160 g/m²) in most other areas of the river except along the U. S. mainland shoreline (where plants were lacking). Vallisneria americana and Heteranthera dubia were the dominant taxa in their collections and in ours. Biomass of macrozoobenthos was low, and dominated by oligochaetes--especially at transect XVIII. Snails, clams, and chironomids were the only other taxa to develop relatively high populations in the area. A variety of substrates were present but no pollution-sensitive insect group developed sizable populations. However, there were small populations of mayflies and caddisflies in areas with high current velocity and rock substrate. Rock bass dominated the fish community at Belle Isle and Point Hennepin, but the spottail shiner and two species of ictalurids were dominant in the lower Detroit River.

Oligochaetes, chironomids and Hydra dominated the upper Detroit River and oligochaetes, nematodes and nemertines dominated the lower Detroit River. Oligochaetes and nematodes were more common in shallow water in May, in contrast to nemertines and Manayunkia, which were more abundant in October in deeper water. Hydra was common only in May in 1983. Elimia, Amnicola, and Ferrisia were the most common gastropod taxa. Pisidium was the dominant pelecypod and Hydropsyche and Cheumatopsyche were the dominant caddisfly taxa. Both Gammarus and Hyalella were common amphipod taxa. Copepods were represented by benthic harpacticoids rather than planktonic taxa.

Spring 1984 Ice Jam

The ice jam that stalled vessels and required ice breaking activity for 3 weeks in late April and early May 1984 provided us with a chance to evaluate a potentially worst-case condition similar to one that might develop under extended season navigation. Macrozoobenthos populations appeared to be the most adversely affected of the three groups studied. Densities of 10 taxa and total biomass were lower in 1984 than in 1983 and most declines occurred in the St. Clair River. However, most of the affected taxa had recovered by fall 1984 to levels equally or exceeding those in fall 1983, and taxa that did not recover completely reached densities that were within 30% of the fall 1983 values. It is not known whether these declines were due to ice scour, lower temperature, or some other factor or combination of factors. Maximum densities of the affected taxa were at the inshore station, and most of the taxa could be categorized as living near

the mud-water interface. Thus the decline could logically be attributed to ice scour in the shallow areas. It would be difficult to ascertain whether lower temperatures were involved, because organisms of each of the taxa have different physiological responses and age structures. Whatever the cause, most taxa that exhibited a seeming decline recovered to 1983 densities within 6 months.

The distribution and occurrence of aquatic macrophyte taxa changed little between years. Maximum percent coverage of macrophyte beds varied little between years and rivers. Development of beds in June was delayed in 1984 in the St. Clair River and at Belle Isle, but by September the beds were little different in 1984 than in 1983, at least through the upper two-thirds of SCDRS. There were significant differences in biomass between years, but there were no consistent differences between locations or months. Impacts on submersed macrophytes, other than possibly delayed development due to lower temperature, could not be ascribed to the ice jam.

Fish catches were usually lower in 1984, but this trend occurred in both rivers and in most comparisons was not statistically significant. Lower catches in 1984 may have been due to the effect of lower temperatures on development of plant beds, general activity level, and seasonal migrations.

CONCLUSIONS AND RECOMMENDATIONS

This study was conducted to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in SCDRS. We believe that we have addressed this objective for the open water season on SCDRS within the constraints imposed by our data, and that our study provides a baseline data set that can be used to evaluate any future extension of the navigation season. We do not believe that the results of our study can be used alone to answer the question of whether increased winter vessel traffic will have a measurable effect on SCDRS. Such an evaluation would require minimally the development of one or more realistic scenarios in which the potential effects of vessel passage in the extended season on ice, water, and sediment movement in the SCDRS was adequately characterized, so that the impact of these physical changes on biota could be examined over the range of expected conditions. The ice jam of April 1984 may have had an undefined effect, but we cannot show that the ice jam was caused or exacerbated by navigation, or that the jam simulated conditions that might occur from vessel operation in January or February.

The benthic, aquatic plant, and fish communities described here appear to exist at the observed level of traffic without obvious ill effects from winter ship traffic. However, winter vessel traffic has occurred in SCDRS for many years and thus there is no truly unaffected baseline from which the effects of winter navigation that may have already occurred can be empirically judged. It has been postulated that increased shipping might amplify ice scour, turbulence, flooding, and dewatering, which in turn could affect the density, location, and behavior of biota in the system. It has also been postulated that the environmental

impacts of increasing winter shipping may be cumulative and take several years to become readily observable. We believe that an evaluation of the potential impacts of winter navigation on SCDRS would be facilitated by the development of an energy flow model plus an age-structured fishery model. The Corps-funded research on SCDRS has provided a substantial data base from which models of these kinds might be developed. Additional data are needed on phytoplankton, periphyton, and zooplankton standing crop and production, plus terrestrial inputs to complete the energy budget. This information would permit quantification of the simultaneous effects of all components according to their interrelationships in the ecosystem, and would avoid the problem associated with a piecemeal evaluation of individual components. Such models would be useful in partitioning impacts so that rational remedial strategies and mitigation could be attempted.

LITERATURE CITED

- Ball, R. C., and T. G. Bahr. 1975. Intensive Survey: Red Cedar River, Michigan. Pages 431-460 in B. A. Whitton, editor. River Ecology. University of California Press, Los Angeles.
- Barton, D. R. 1980. Benthic macroinvertebrate communities of the Athabasca River near Ft. MacKay, Alberta. *Hydrobiologia* 74:151-160.
- Barton, D. R., and H. B. N. Hynes. 1978. Wave-zone macrobenthos of the exposed Canadian shores of the St. Lawrence Great Lakes. *J. Great Lakes Res.* 4(1):27-45.
- Barton, D. R., and M. A. Lock. 1979. Numerical abundance and biomass of bacteria, algae and macrobenthos of a large northern river, the Athabasca. *Int. Rev. gesampften Hydrobiol.* 64:345-359.
- Barton, D. R., and S. M. Smith. 1984. Insects of extremely small and extremely large aquatic habitats. Pages 456-483 in V. H. Resh and D. M. Rosenberg, editors. *The Ecology of Aquatic Insects*. Praeger Publishers, New York.
- Berner, L. M. 1951. Limnology of the lower Missouri River. *Ecology* 32:1-12.
- Bodkin, P. C., V. Poluszny, and H. M. Dale. 1980. Light and pressure in two freshwater lakes and their influence on the growth, morphology and depth limits of Hippuris vulgaris. *Freshwater Biol.* 10:545-552.
- Brown, C. L. 1983. Productivity of aquatic macrophytes and associated periphyton in Lake St. Clair: a data report. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. 41 pp.
- Brown, C. L., T. P. Poe, J. R. P. French III, and D. W. Schloesser. 1986. Relationship of phytomacrofauna to surface area in naturally occurring macrophyte stands. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 86-2, 32 pp.
- Brouha, P., and C. E. von Geldern, Jr. 1979. Habitat manipulation for centrarchid production in western reservoirs. Pages 11-17 in D. L. Johnson and R. A. Stein, editors. *Response of Fish to Habitat Structure in Standing Water*. North Central Division American Fisheries Society Special Publication 6.
- Chambers, P. A., and J. Kalff. 1985. Depth distribution and biomass of submersed aquatic macrophyte communities in relation to Secchi depth. *Can. J. Fish. Aquat. Sci.* 42:701-709.
- Cole, L. J. 1903. The delta of the St. Clair River. Geological Survey of Michigan. Vol. IX, Part 1, 25 pp.

- Cooley, J. L. 1978. Environmental assessment of the FY 1979 winter navigation demonstration on the St. Lawrence River. Technical Report L. Environmental Assessment. FY 1979 Winter Navigation Demonstration on the St. Lawrence River. State University of New York. Institute of Environmental Program Affairs. Syracuse, NY. 17 pp.
- Cosentino, P. M. 1983. Fish community structure and the utilization of Harsens Island marsh-bay complex, Lake St. Clair. Fisheries Research Report No. 1913. Michigan Department of Natural Resources, Lansing, MI. 41 pp.
- Crowder, A. A., J. M. Bristow, M. R. King, and S. Vanderloet. 1977. Distribution, seasonality, and biomass of aquatic macrophytes in Lake Opinicon (Eastern Ontario). *Nat. Can.* 104:441-456.
- Derecki, J. A. 1984a. St. Clair River physical and hydraulic characteristics. Great Lakes Environmental Research Laboratory Open File Report. Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI. 10 pp.
- Derecki, J. A. 1984b. Lake St. Clair physical and hydraulic characteristics. Great Lakes Environmental Research Laboratory Open File Report. Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI. 8 pp.
- Derecki, J. A. 1984c. Detroit River physical and hydraulic characteristics. GLERL Open File Report. Great Lakes Environmental Research Laboratory, NOAA, Ann Arbor, MI. 11 pp.
- Gleason, G. R., D. J. Behmer, and K. L. Vincent. 1979. Evaluation of benthic dislocation due to ship-induced pressure waves. Lake Superior State College, Project Number 5100 of the Great Lakes Basin Commission, Ann Arbor, MI. 62 pp.
- Goodyear, C. D., T. A. Edsall, D. M. O. Dempsey, G. D. Moss, and P. E. Polanski. 1982. Atlas of spawning and nursery areas of Great Lakes fishes. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Report FWS/OBS-82/52, Vol. VI, VII, VIII.
- Gregg, W. W., and F. L. Rose. 1982. The effects of aquatic macrophytes on the stream microenvironment. *Aquat. Bot.* 14:309-324.
- Haag, R. W. 1979. The ecological significance of dormancy in some rooted aquatic plants. *J. Ecol.* 67:727-738.
- Haas, R. C., W. C. Bryant, K. D. Smith, and A. J. Nuhfer. 1986. Movement and harvest of fish in Lake St. Clair, St. Clair River and Detroit River. Final report on Winter Navigation Study, U. S. Army Corps of Engineers. Michigan Department of Natural Resources. Fisheries Division.

- Hamdy, Y., and L. Post. 1985. Distribution of mercury, trace organics, and other heavy metals in Detroit River sediments. *J. Great Lakes Res.* 11:353-365.
- Harlow, G. L. 1965. Report on pollution of the Detroit River, Michigan waters of Lake Erie, and their tributaries. Summary, conclusions, and recommendations. Pages 756-851 in *Proceedings of the Conference in the matter of pollution of the navigable waters of the Detroit River and Lake Erie and their tributaries in the State of Michigan*. Vol. 3. U. S. Department of Health, Education, and Welfare, Public Health Service, Washington, D.C.
- Hatcher, C. O., and R. T. Nester. 1983. Distribution and abundance of fish larvae in the St. Clair and Detroit rivers. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 83-5, 41 pp.
- Helfman, G. S. 1979. Fish attraction to floating objects in lakes. Pages 49-57 in D. L. Johnson and R. A. Stein, editors. *Response of Fish to Habitat Structure in Standing Water*. North Central Division American Fisheries Society Special Publication 6.
- Hill, B. H., and J. R. Webster. 1983. Aquatic macrophyte contribution to the New River organic matter budget. Pages 273-282 in T. D. Fontaine III and S. M. Bartell, editors. *Dynamics of Lotic Ecosystems*. Ann Arbor Science, Ann Arbor, MI.
- Hiltunen, J. K. 1979. Investigation of macrobenthos in the St. Marys River during an experiment to extend navigation through winter, 1974-75. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Administrative Report.
- Hiltunen, J. K. 1980. Composition, distribution, and density of benthos in the lower St. Clair River, 1976-1977. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Administrative Report 80-4, 28 pp.
- Hiltunen, J. K., and B. A. Manny. 1982. Distribution and abundance of macrozoobenthos in the Detroit River and Lake St. Clair, 1977. U. S. Fish and Wildlife Service. Great Lakes Fishery Laboratory. Administrative Report 82-2, 87 pp.
- Hiltunen, J. K., and D. W. Schloesser. 1983. The occurrence of oil and the distribution of *Hexagenia* (Ephemeroptera:Ephemeridae) nymphs in the St. Marys River, Michigan and Ontario. *Freshwater Invert. Biol.* 2(4):199-203.
- Hotchkiss, N. 1967. Underwater and floating-leaved plants of the United States and Canada. U. S. Bur. Wildl. Serv. Resour. Publ. 44. 124 pp.

- Hotchkiss, N. 1970. Common marsh plants of the United States and Canada. U. S. Fish. Wildl. Serv. Resour. Publ. 93. 99 pp.
- Hudson, P. L., and S. J. Nichols. In Press. Benthic community of the Savannah River below a peaking hydropower station. J. Entomol. Sci.
- Hudson, P. L., and G. A. Swanson. 1972. Production and standing crop of Hexagenia (Ephemeroptera) in a large reservoir. Stud. Nat. Sci. (Portales, N. M.) 1 (4):1-36.
- Jones, J. J. 1982. Potential effects of winter shipping on diving ducks wintering in the Detroit River. Master of Science Thesis, University of Michigan, Ann Arbor, 91 pp.
- Kallemeyn, L. W., and J. F. Novotny. 1977. Fish and fish food organisms in various habitats of the Missouri River in South Dakota, Nebraska, and Iowa. U. S. Fish. Wildl. Serv., Biol. Serv. Prog., FWS/OBS-77/25. 100 pp.
- Kauss, P. B., and Y. S. Hamdy. 1985. Biological monitoring of organochlorine contaminants in the St. Clair and Detroit rivers using introduced clams, Elliptio complanatus. J. Great Lakes Res. 11:247-263.
- Kunii, H. 1981. Characteristics of the winter growth of detached Elodea nuttallii (Planch.) St. John in Japan. Aquat. Bot. 11:57-66.
- Larimore, R. W., and D. D. Garrels. 1985. Assessing habitats used by warm water stream fishes. Fisheries (Bethesda) 10(2):10-16.
- Limno-Tech, Inc. 1985. Summary of the existing status of the upper Great Lakes connecting channels data. Limno-Tech, Inc., Ann Arbor, MI. 157 pp.
- Liston, C. R., W. G. Duffy, D. E. Ashton, T. Batterson, and C. D. McNabb. 1981. Supplementary environmental baseline studies and evaluation of the St. Marys River during 1980. U. S. Fish. Wildl. Serv., Biol. Serv. Prog., FWS/OBS 80/62.1. 167 pp.
- Liston, C. R., W. G. Duffy, D. E. Ashton, C. D. McNabb, and F. E. Koehler. 1980. Environmental baseline and evaluation of the St. Marys River dredging. U. S. Fish. Wildl. Serv., Biol. Serv. Prog., FWS/OBS-80/62, 295 pp.
- Liston, C. R., and C. McNabb, (Principal investigators) with D. Brazo, J. Bohr, J. Craig, W. Duffy, G. Fleisher, G. Knoecklein, F. Koehler, R. Ligan, R. O'Neal, M. Siami, and P. Roettger. 1986. Environmental baseline studies of the St. Marys River during 1982 and 1983, prior to proposed extension of the navigation season. Draft Report submitted to the U. S. Fish and Wildlife Service under contract 14-16-0009-79-013 and the U. S. Army Corps of Engineers, Detroit District.

- McCauley, C. 1985. An annotated bibliography on the macrozoobenthos and aquatic macrophytes of the St. Clair River, Lake St. Clair and the Detroit River. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 85-2, 43 pp.
- Michigan Water Resources Commission. 1967. Water resources uses: present and prospective for St. Clair River, Detroit River, Lake Erie, Maumee River Basin and water quality standards and plan of implementation. Michigan Department of Conservation, Lansing, MI. 153 pp.
- Mills, E. L., S. B. Smith, and J. L. Forney. 1981. The St. Lawrence River in winter: population structure, biomass, and patterns of its primary and secondary food web components. *Hydrobiologia* 79:65-75.
- Mozola, A. J. 1969. Geology for land and ground-water development in Wayne County, Michigan. Michigan Geological Survey, Department of Natural Resources. Report of Investigation 3, 19 pp.
- Mudroch, A. 1985. Geochemistry of the Detroit River sediments. *J. Great Lakes Res.* 11:193-200.
- Muth, K. M., D. R. Wolfert, and M. T. Bur. Environmental Study of Fish Spawning and Nursery Areas in the St. Clair--Detroit River System. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 86- , 53 pp.
- Nowell, A. R. M., and P. A. Jumars. 1984. Flow environments of aquatic benthos. *Annu. Rev. Ecol. Syst.* 15:303-328.
- Ontario Ministry of the Environment. 1979. St. Clair River organics study, biological surveys 1963 and 1977. Ontario Ministry of the Environment, Water Resources Assessment Unit, London, Ontario, 90 pp.
- Ozimek, T., A. Prejs, and K. Prejs. 1976. Biomass and distribution of underground parts of Potamogeton perfoliatus L. and P. lucens L. in Mikolajskie Lake, Poland. *Aquat. Bot.* 2:309-316.
- Paxton, K., and F. Stevenson. 1979. Influence of artificial structure on angler harvest from Killdeer Reservoir, Ohio. Pages 70-76 in D. L. Johnson and R. A. Stein, editors. Response of fish to habitat structure in standing water. North Central Division American Fisheries Society Special Publication 6.
- Pennington, C. H., H. L. Schramm, Jr., M. E. Potter, and M. P. Farrell. 1980. Aquatic habitat studies on the Lower Mississippi River, river mile 480-530; Report 5; Fish studies--pilot report. U. S. Army Engineer Waterways Experiment Station. Environmental Laboratory. Miscellaneous Paper E-80-1.

- Poe, T. P. 1983. Food habits of larval yellow perch as a potential indicator of water and habitat quality. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, Michigan. Administrative Report 83-2, 21 pp.
- Poe, T. P., and T. A. Edsall. 1982. Effects of vessel-induced waves on the composition and amount of drift in an ice environment in the St. Marys River. U. S. Fish and Wildlife Service. Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 82-6, 45 pp.
- Poe, T. P., T. A. Edsall, and J. K. Hiltunen. 1980. Effect of ship-induced waves in an ice environment on the St. Marys River ecosystem. U. S. Fish and Wildlife Service, Great Lakes Fishery Laboratory, Ann Arbor, MI. Administrative Report 80-6, 125 pp.
- Prince, E. D., and O. E. Maughan. 1979. Attraction of fishes to tire reefs in Smith Mountain Lake, Virginia. Pages 19-25 in D. L. Johnson and R. A. Stein, editors. Response of Fish to Habitat Structure in Standing Water. North Central Division American Fisheries Society Special Publication 6.
- Pugsley, C. W., P. D. N. Herbert, G. W. Wood, G. Brotea, and T. W. Obal. 1985. Distribution of contaminants in clams and sediment from the Huron-Erie corridor. I-PCBs and Octachlorostyrene. J. Great Lakes Res. 11:275-289.
- SAS Institute Inc. 1982. SAS User's Guide: Statistics 1982 Edition. SAS Institute, Cary, NC. 584 pg.
- Schloesser, D. W., T. A. Edsall, and B. A. Manny. 1985. Growth of submersed macrophytes communities in the St. Clair-Detroit river system between Lake Huron and Lake Erie. Can. J. Bot. 63:1061-1065.
- Schloesser, D. W., and B. A. Manny. 1982. Distribution and relative abundance of submersed aquatic macrophytes in the St. Clair-Detroit River ecosystem. U. S. Fish and Wildlife Service. Great Lakes Fishery Laboratory. Administrative Report 82-7, 49 pp.
- Schloesser, D. W., and B. A. Manny. 1984. Rapid qualitative methods for estimating the biomass of submersed macrophytes in large water bodies. J. Aquat. Plant Manage. 22:102-104.
- Sculthorpe, C. D. 1967. The biology of aquatic vascular plants. Edward Arnold Ltd., London. 610 pp.
- Sheldon, B. R., and C. W. Boylen. 1977. Maximum depth inhabited by aquatic vascular plants. Am. Midl. Nat. 97:248-254.
- Texas Instruments Incorporated, Ecological Services. 1975. Report of fish and macrozooplankton studies on the St. Clair River in the vicinity of the proposed Belle River Power Plant. Prepared for Detroit Edison. Texas Instruments Inc., Dallas, TX. v.p.

- Thornley, S. 1985. Macrozoobenthos of the Detroit and St. Clair Rivers with comparisons to neighboring waters. *J. Great Lakes Res.* 11:290-296.
- Thornley, S., and Y. Hamdy. 1984. An assessment of the bottom fauna and sediments of the Detroit River. Ontario Ministry of the Environment, 48 pp.
- Trautman, M. B. 1981. The fishes of Ohio. Ohio State University Press, Columbus, OH. 782 pp.
- USACE (U. S. Army Corps of Engineers). 1980. Final Environmental Impact Statement, Belle River Power Plant, St. Clair County, Michigan. U. S. Army Corps of Engineers, Detroit District, v. p.
- USACE. 1984. Appendix to the St. Clair River ice jam report. Great Lakes Hydraulics and Hydrology Branch. U. S. Army Corps of Engineers, Detroit District. 40 pp.
- Voss, E. G. 1972. Michigan Flora Part I: Gymnosperms and monocots. Cranbrook Institute of Science. Bloomfield Hills, MI. 488 pp.
- Walburg, C. E., J. F. Novotny, K. E. Jacobs, and W. D. Swink. 1983. Effects of reservoir releases on water quality, macroinvertebrates, and fish in tailwaters: field study results. Technical Report E-83-6, prepared by National Reservoir Research Program, U. S. Fish and Wildlife Service, for the U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS. 109 pp.
- Werner, E. E., J. F. Gilliam, D. J. Hall, and G. G. Mittlebach. 1983. An experimental test of the effects of predation risk on habitat use in fishes. *Ecology* 64:1540-1548.
- Westlake, D. F. 1963. Comparisons of plant productivity. *Biol. Rev. Camb. Philos. Soc.* 38:385-425.
- Westlake, D. F. 1985. Macrophytes. Pages 106-128 in B. A. Whitton, editor. *River Ecology*. University of California Press, Los Angeles.

APPENDIX A

Sampling Locations for Macrozoobenthos

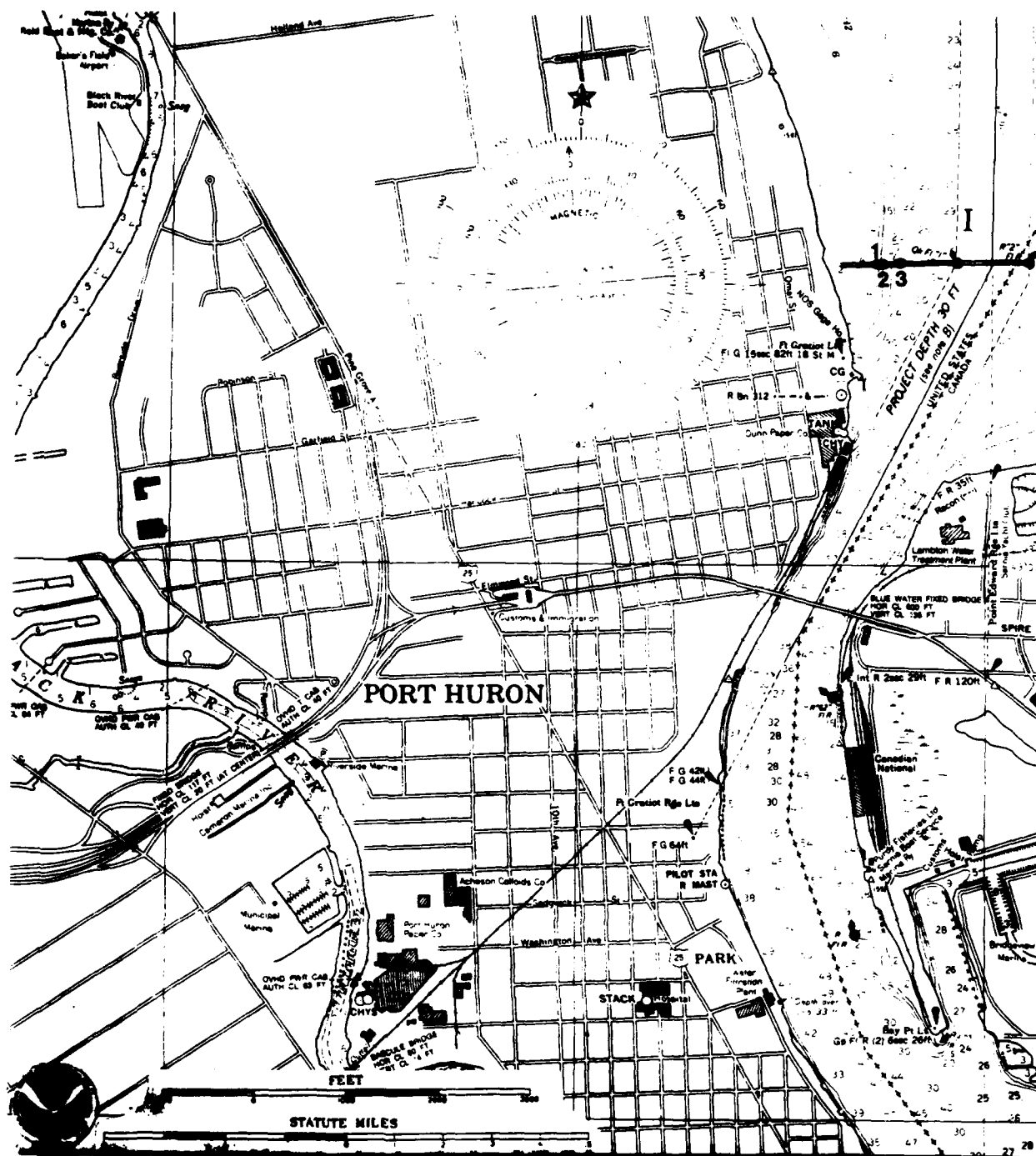
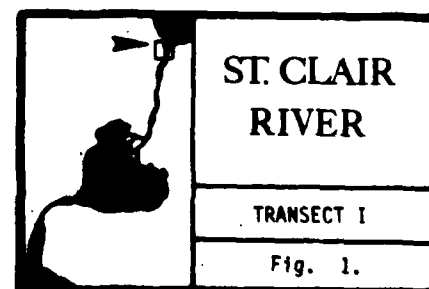


Fig. 1.

Transect I is in line with buoys number 1 and 2 at the head of the St. Clair River. Stations 1, 2, and 3 are in water 8, 12, and 16 feet deep, respectively, on the U.S. side of the shipping channel about 600-750 feet offshore.



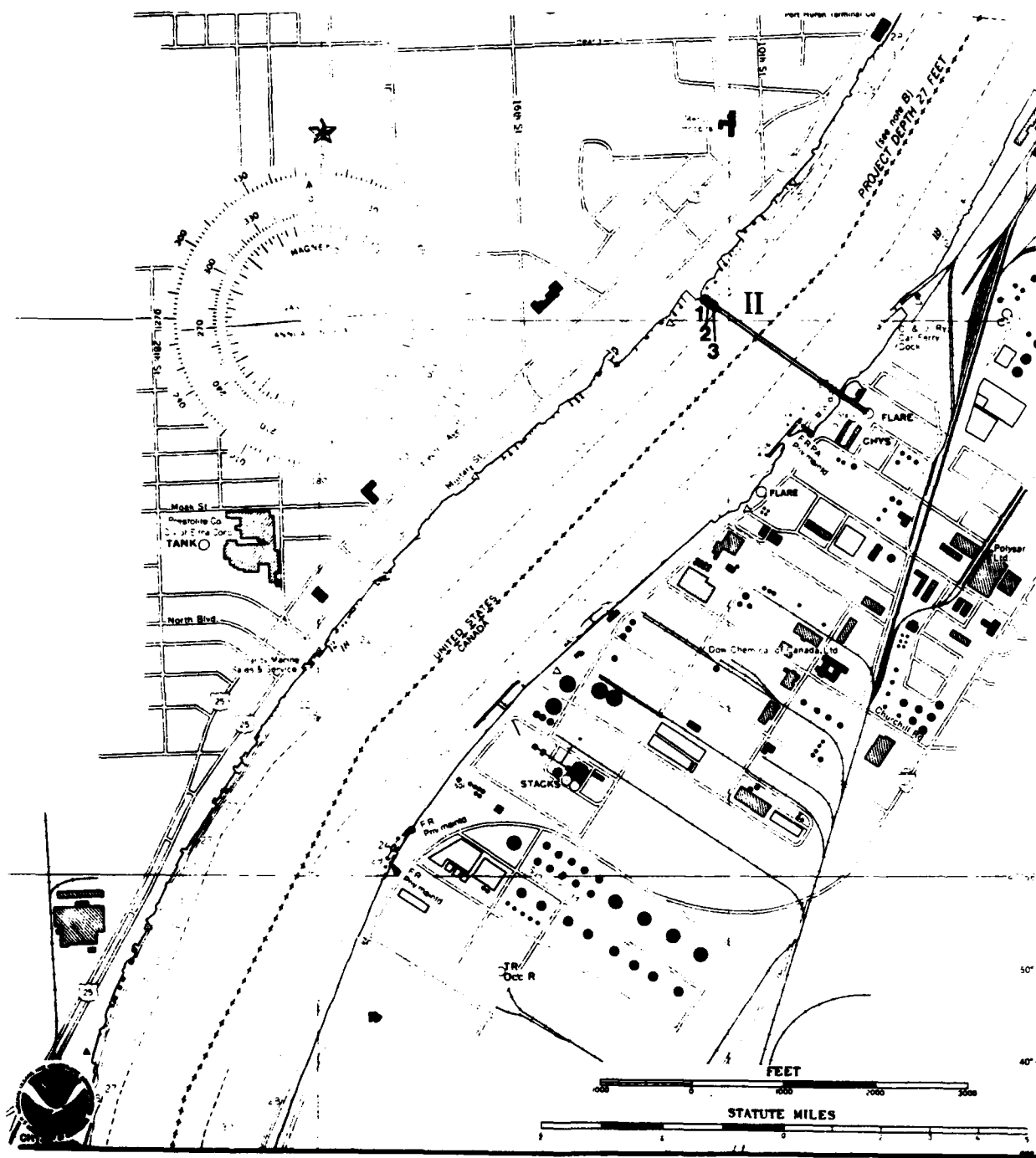
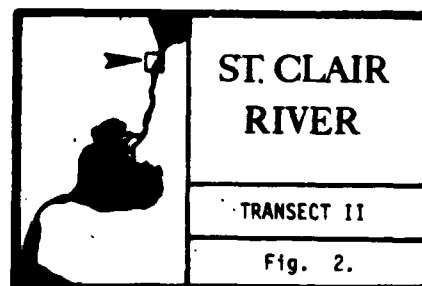


Fig. 2.

Transect II is in the St. Clair River about 4.5 miles downstream from transect I and is in line with a peninsular piece of land on U.S. side and a flare on the property of Dow Chemical of Canada, Ltd. Stations 1, 2, and 3 are in water 5, 10, and 16 feet deep, respectively, on the U.S. side of the shipping channel about 50-100 feet offshore.



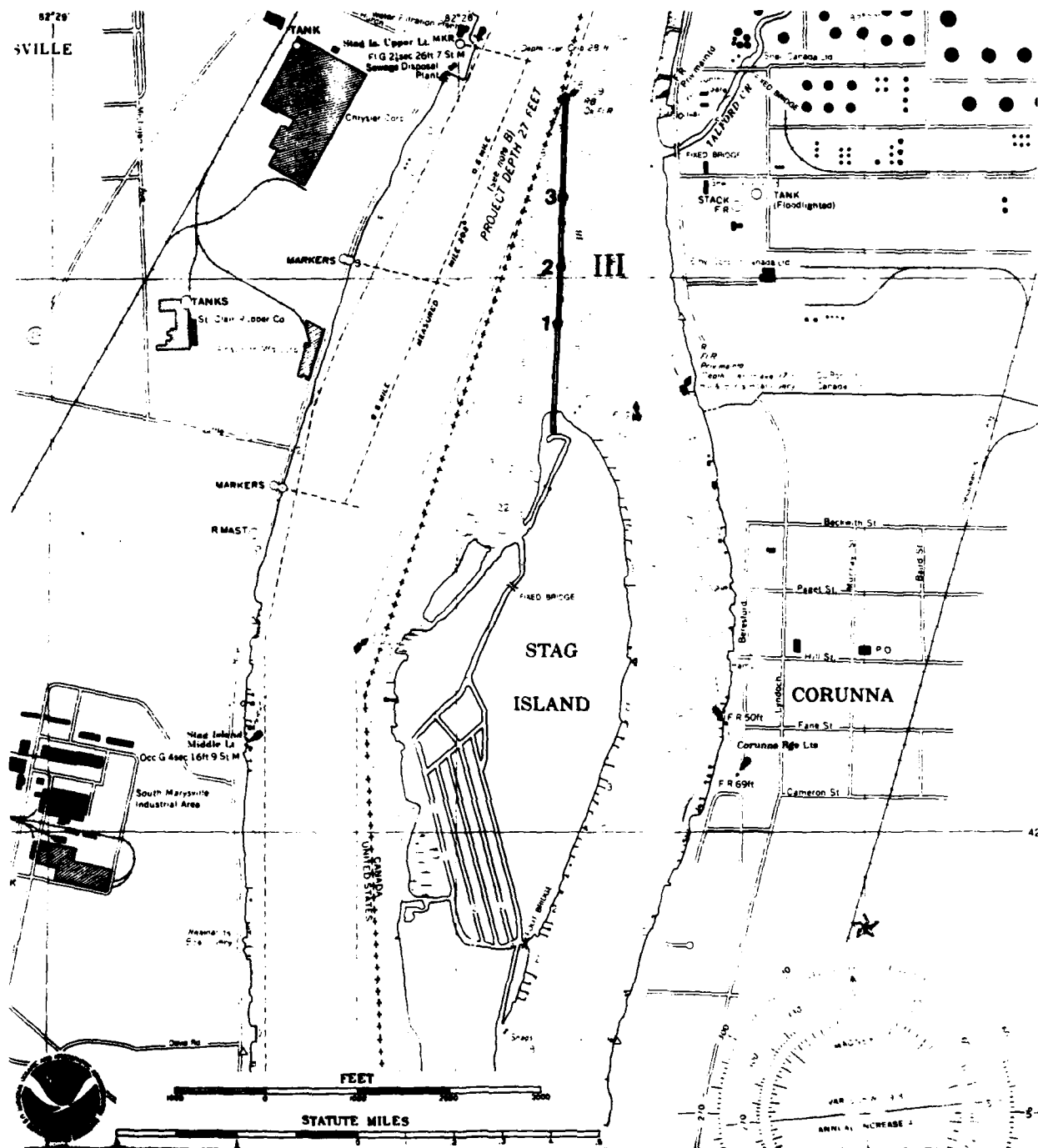
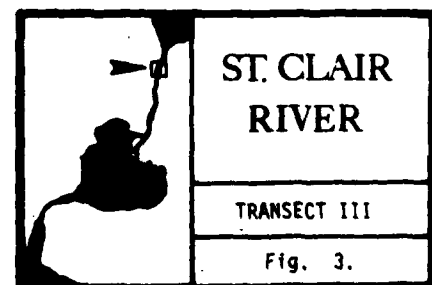


Fig. 3.

Transect III is at the head of Stag Island, about 4 miles downstream from transect II. The transect extends from the upstream tip of the island to buoy RB. Stations 1, 2, and 3 are in water 6, 13, and 18 feet deep, respectively, about 1000-2500 feet offshore.



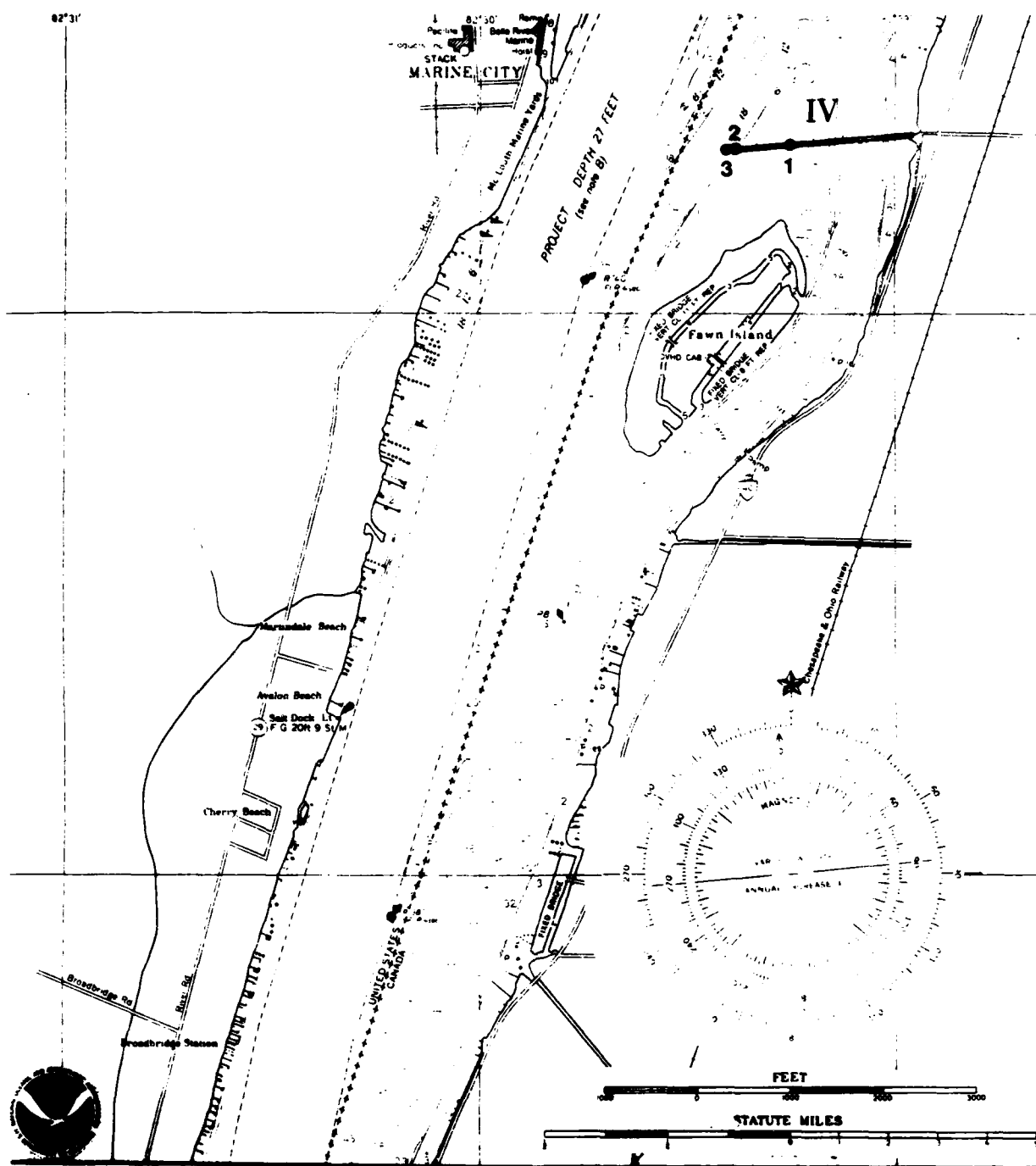
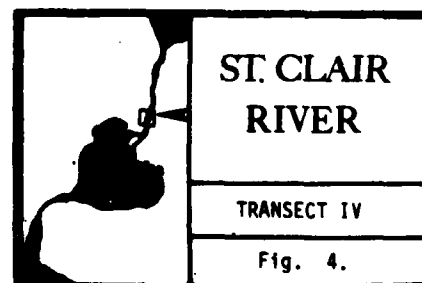


Fig. 4.

Transect IV is at the head of Fawn Island and is about 13 miles downstream from transect III. It extends due west from an unnamed east-west road on the Canadian shore. Stations 1, 2, and 3 are in water 4, 12, and 16 feet deep, respectively.



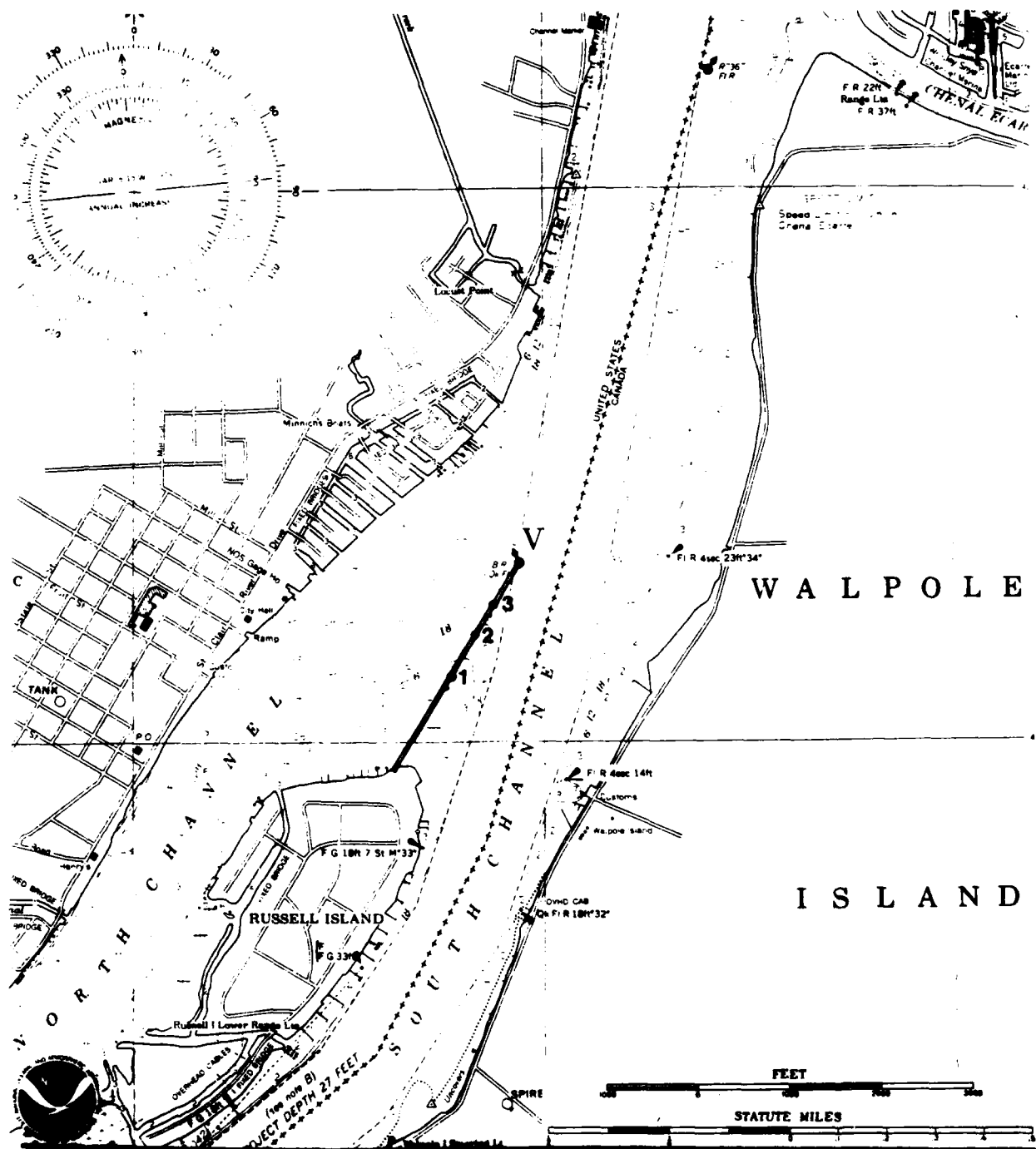
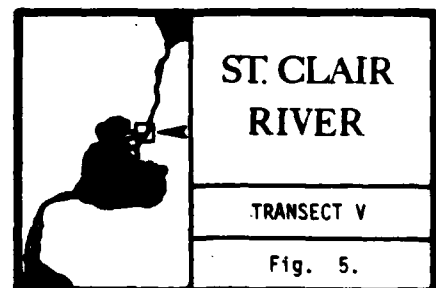


Fig. 5.

Transect V is at the head of Russell Island about 5.5 miles downstream from transect IV. It extends from the upstream tip of the island to buoy BR. Stations 1, 2, and 3 are in water 5, 10, and 16 feet deep, respectively, about 650-2100 feet offshore of Russell Island.



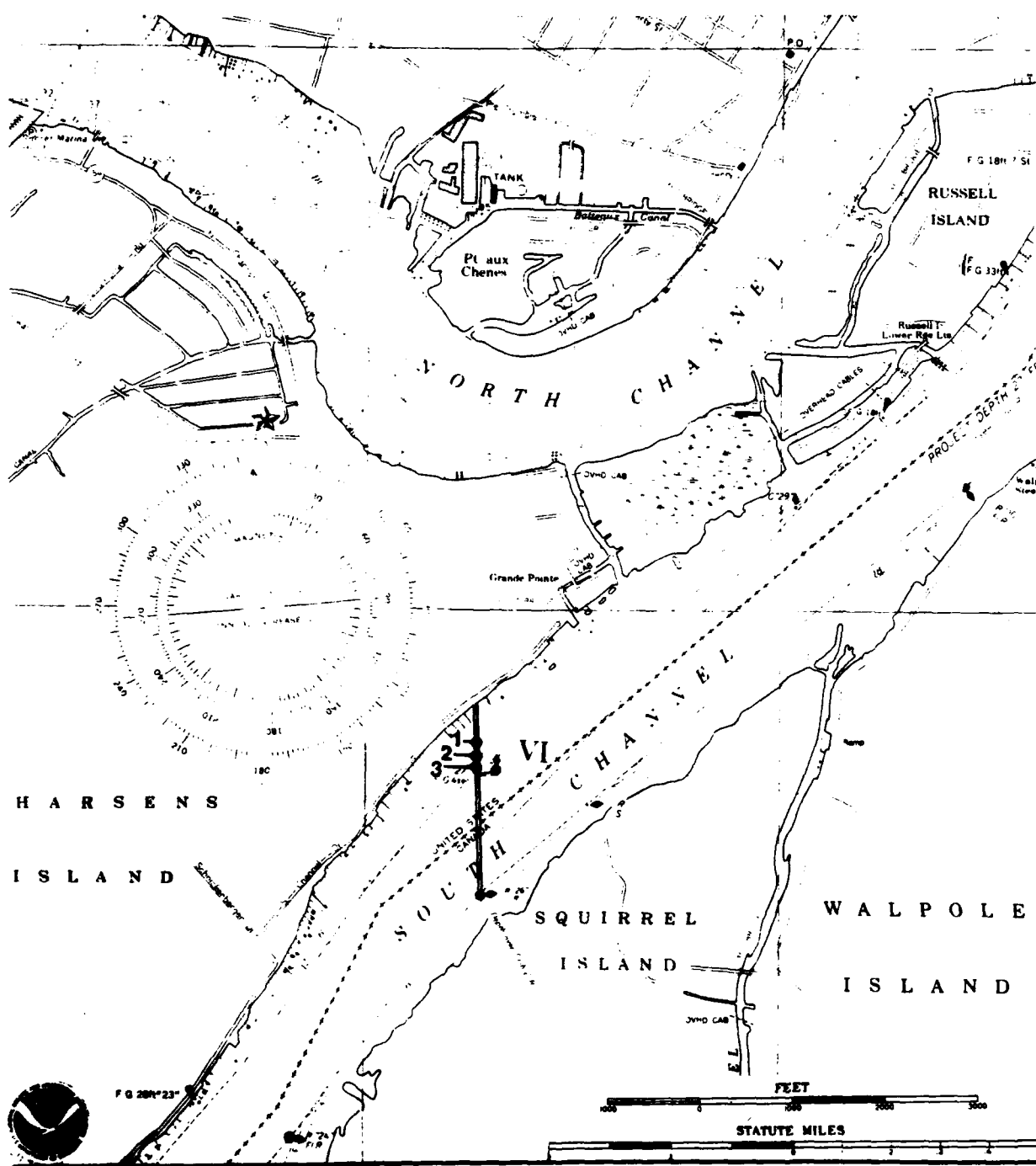
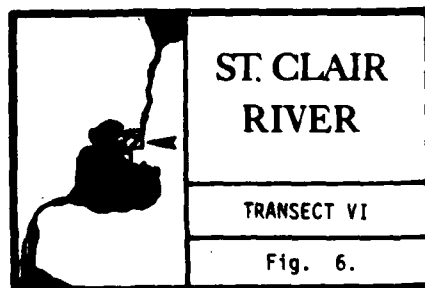


Fig. 6.

Transect VI is in the South Channel in line with buoys number 26 and 27 about 2.2 miles downstream from transect V. Stations 1, 2, and 3 are in water 4, 8, and 13 feet deep, respectively, about 400-750 feet offshore.



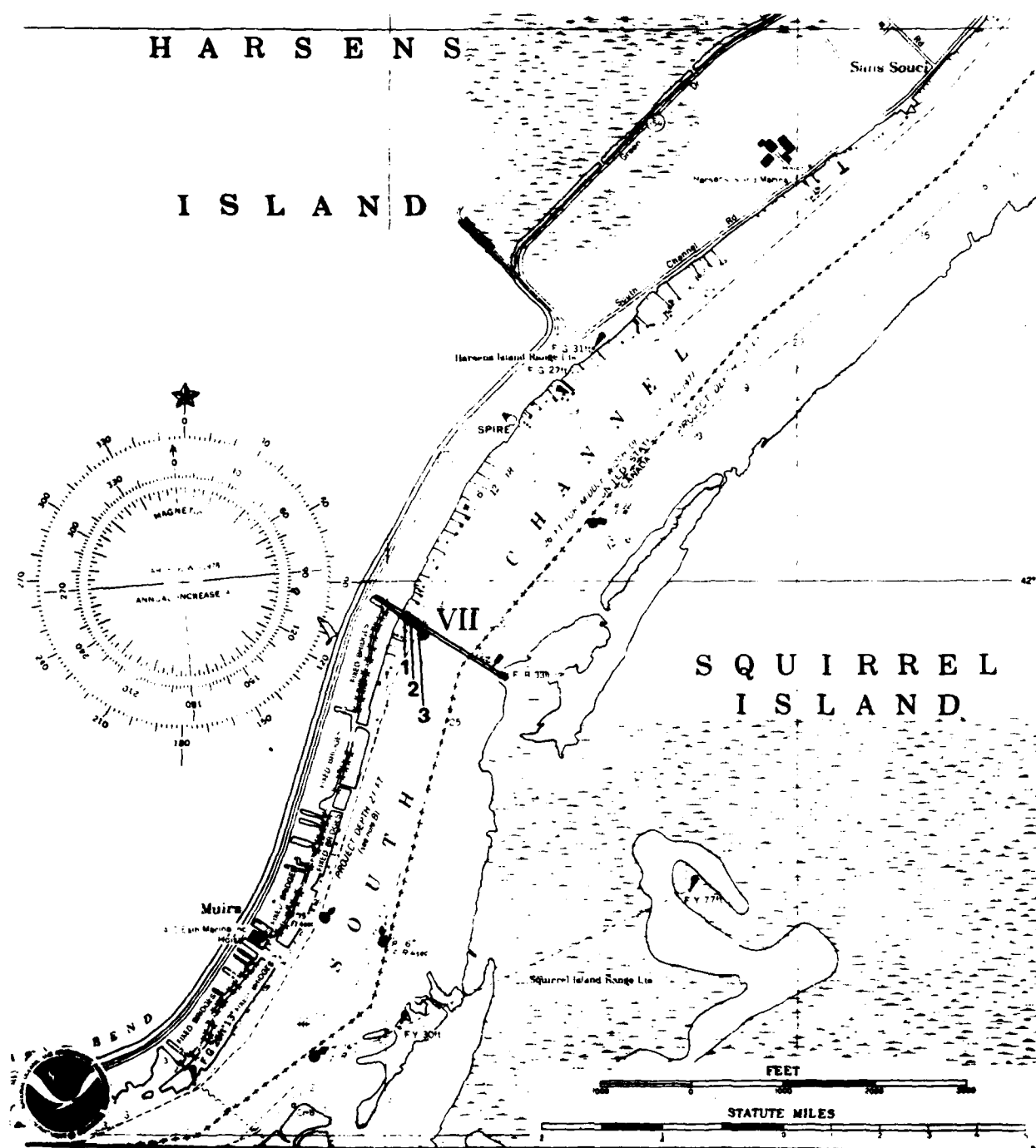
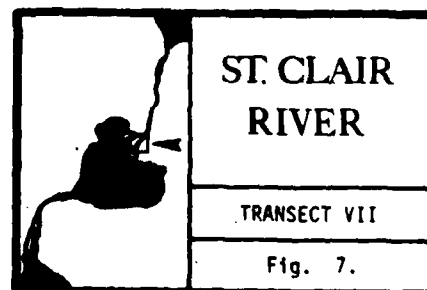


Fig. 7.

Transect VII is in the South Channel in line with buoys 17 and 20 about 2.9 miles downstream from transect VI. Stations 1, 2, and 3 are in water 6, 10, and 18 feet deep, respectively, about 100-250 feet offshore.



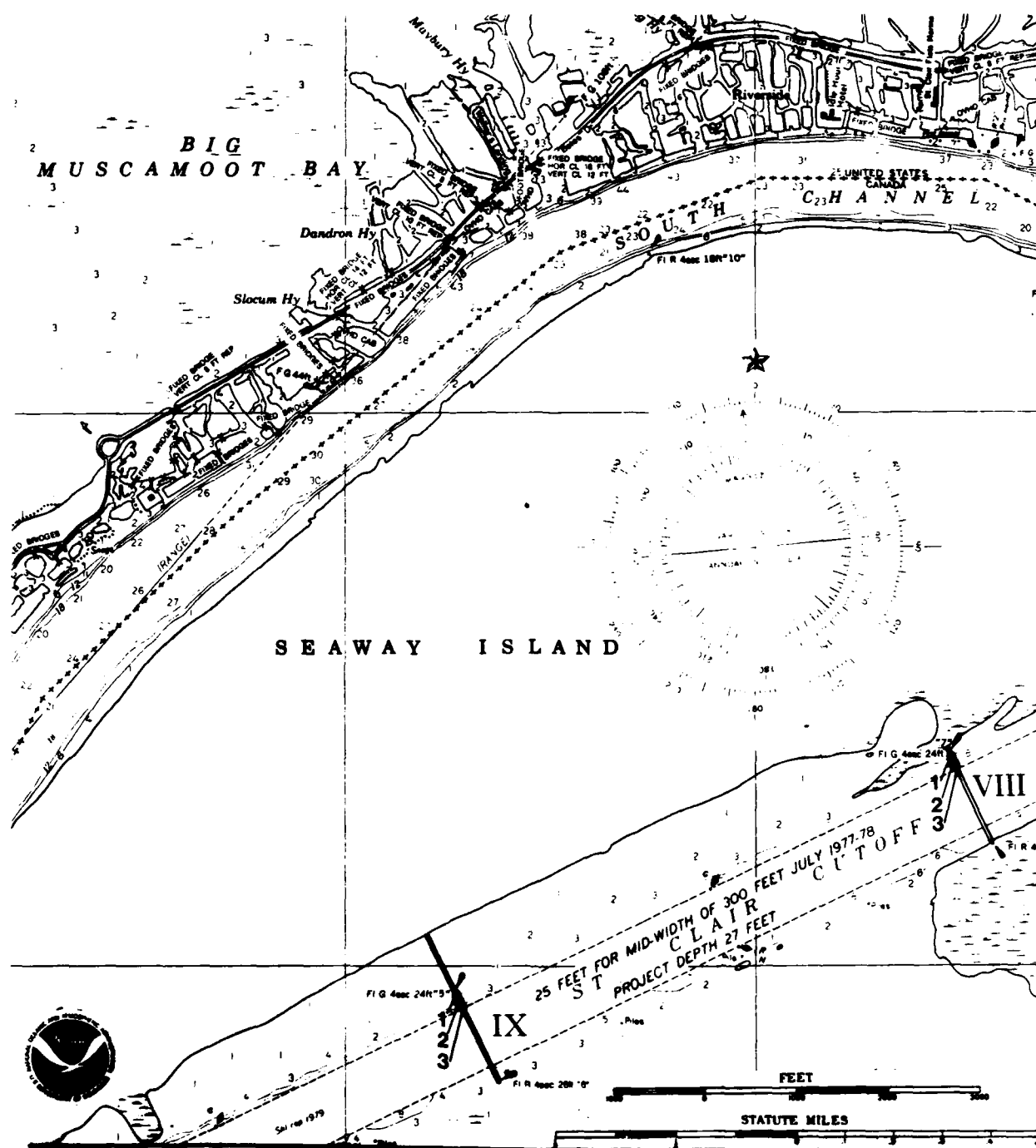


Fig. 8.

Transect VIII is in the St. Clair Cut-off Channel in line with Lights 7 and 8 about 3.2 miles downstream from transect VII. Stations 1, 2, and 3 are in water 4, 7, and 14 feet deep, respectively, about 100-250 feet offshore. Transect IX is in the St. Clair Cut-off Channel, in line with Lights 5 and 6. Stations 1, 2, and 3 are in water 5, 8, and 13 feet deep, respectively, about 700-800 feet offshore.

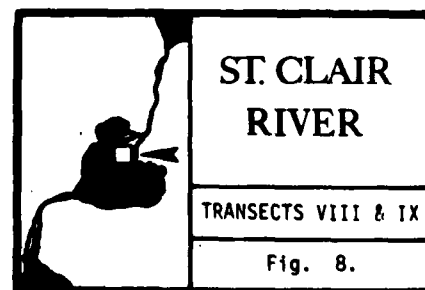




Fig. 10.

Transect XI is in Lake St. Clair in line with buoys 25 and 26 about 4.5 miles downstream from transect X. Stations 1, 2, and 3 are in water 19, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel. Transect XII is in Lake St. Clair, in line with buoy 24 and a stationary Light. Stations 1, 2, and 3 are in water 21, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel. Transect XIII is in Lake St. Clair, in line with buoys 21 and 22. Stations 1, 2, and 3 are in water 20, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel.

	LAKE ST. CLAIR
	TRANS XI, XII & XIII
	Fig. 10.

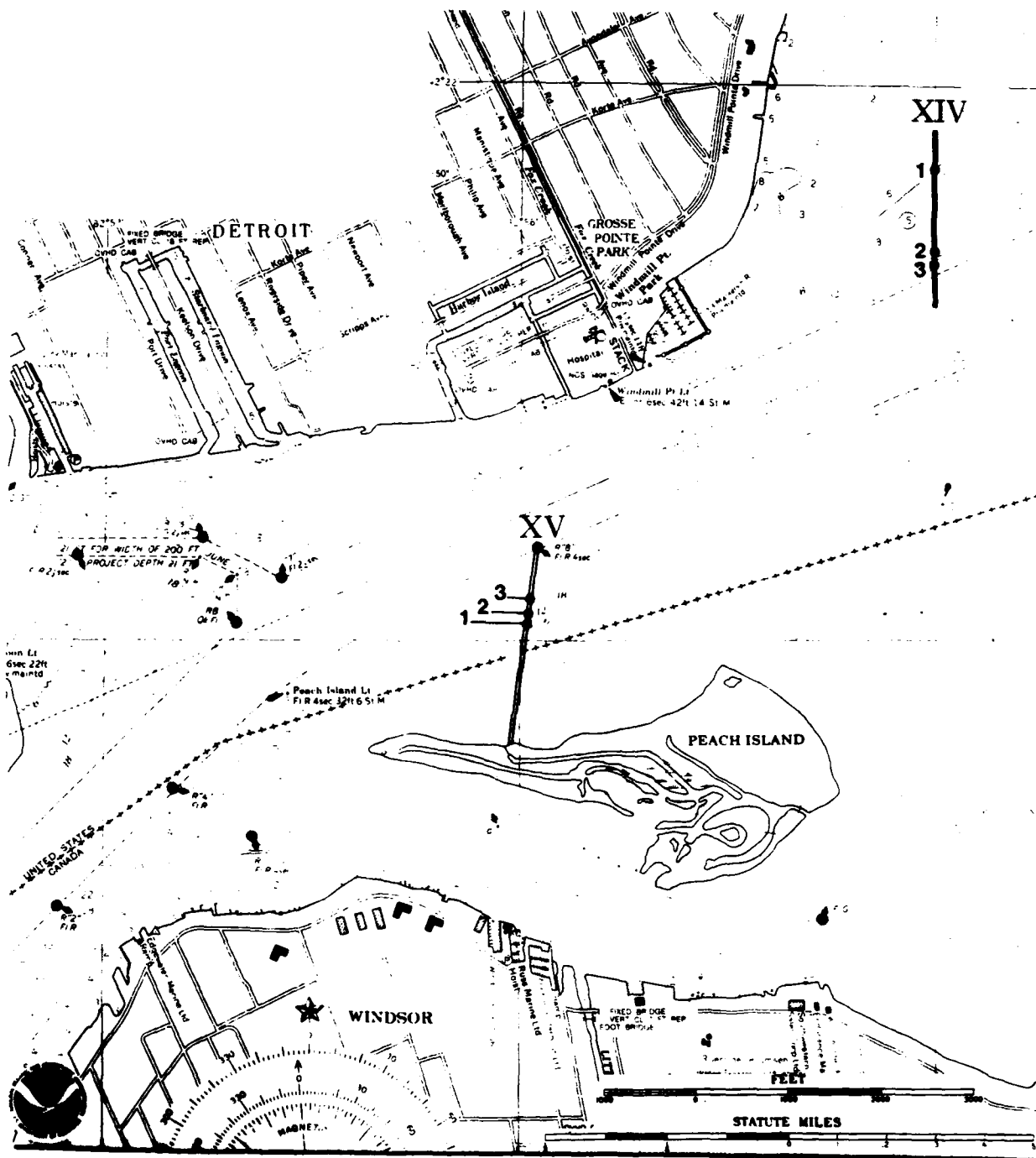
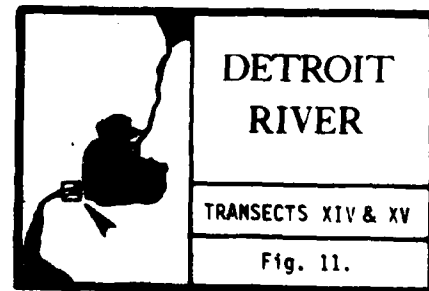


Fig. 11.

Transect XIV is in Lake St. Clair near the head of the Detroit River on a bearing of 4° from the Peach Island Range Tower. Stations 1, 2, and 3 are in water 7, 10, and 18 feet deep, respectively, on the north side of the channel, about 5000-6000 feet offshore. Transect XV is in the Detroit River on a bearing of 187° from buoy 8 on the north side of Peach Island. Stations 1, 2, and 3 are in water 7, 10, and 17 feet deep, respectively, about 1300-1600 feet offshore of Peach Island.



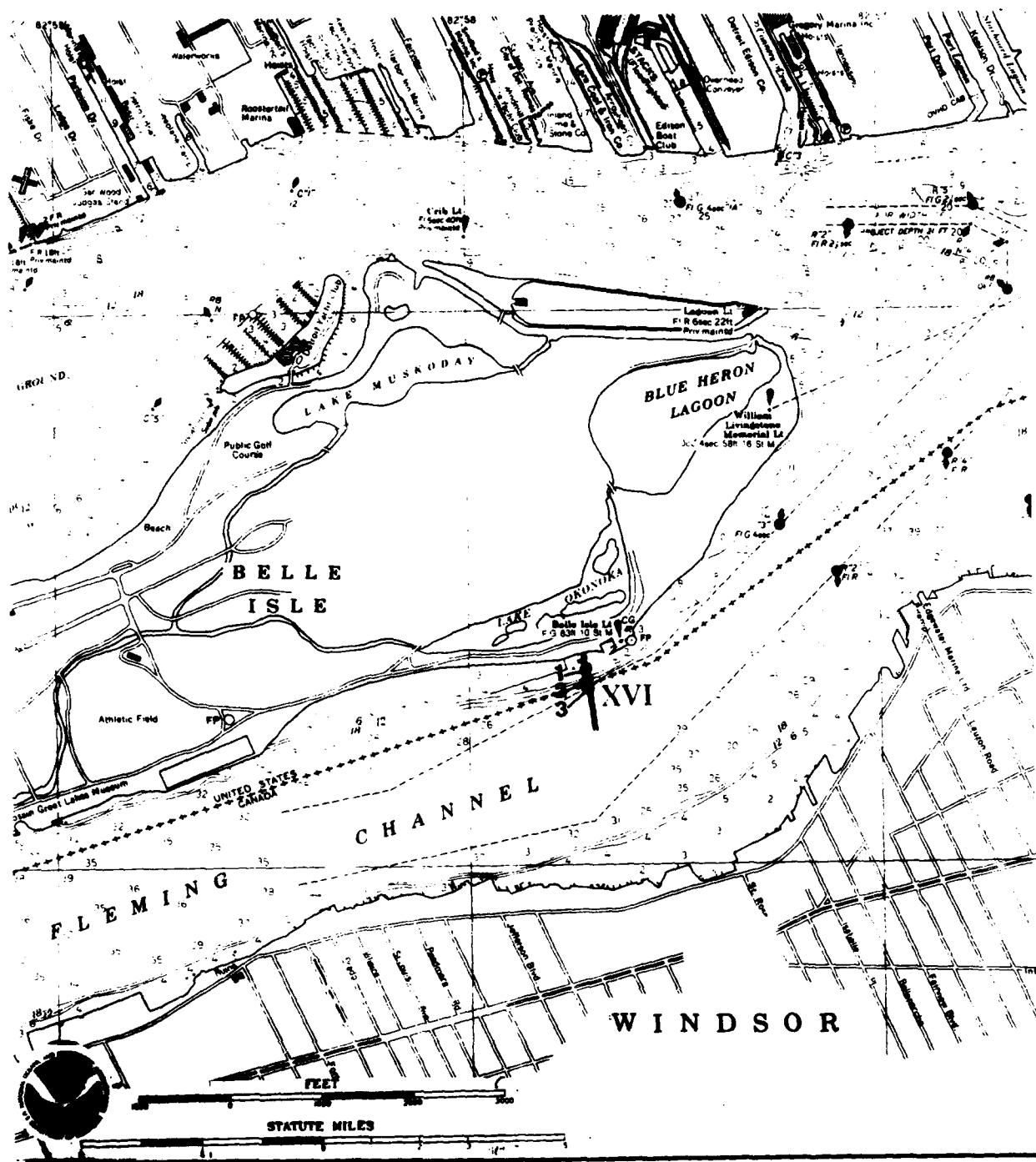
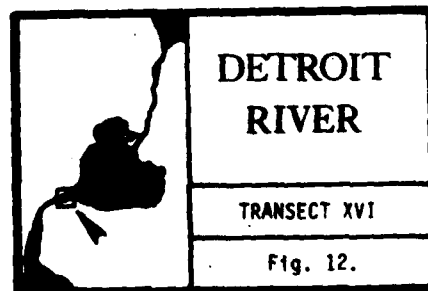


Fig. 12.

Transect XVI is on the south side of Belle Isle about 1.8 miles downstream from transect XV. The transect extends on a bearing of 172° from a point on the shoreline midway between the entrance to the Coast Guard Station vessel slip and the base of the Michigan Department of Natural Resources fishing pier. Stations 1, 2, and 3 are in water 6, 9, and 16 feet deep, respectively, and about 50-250 feet offshore.



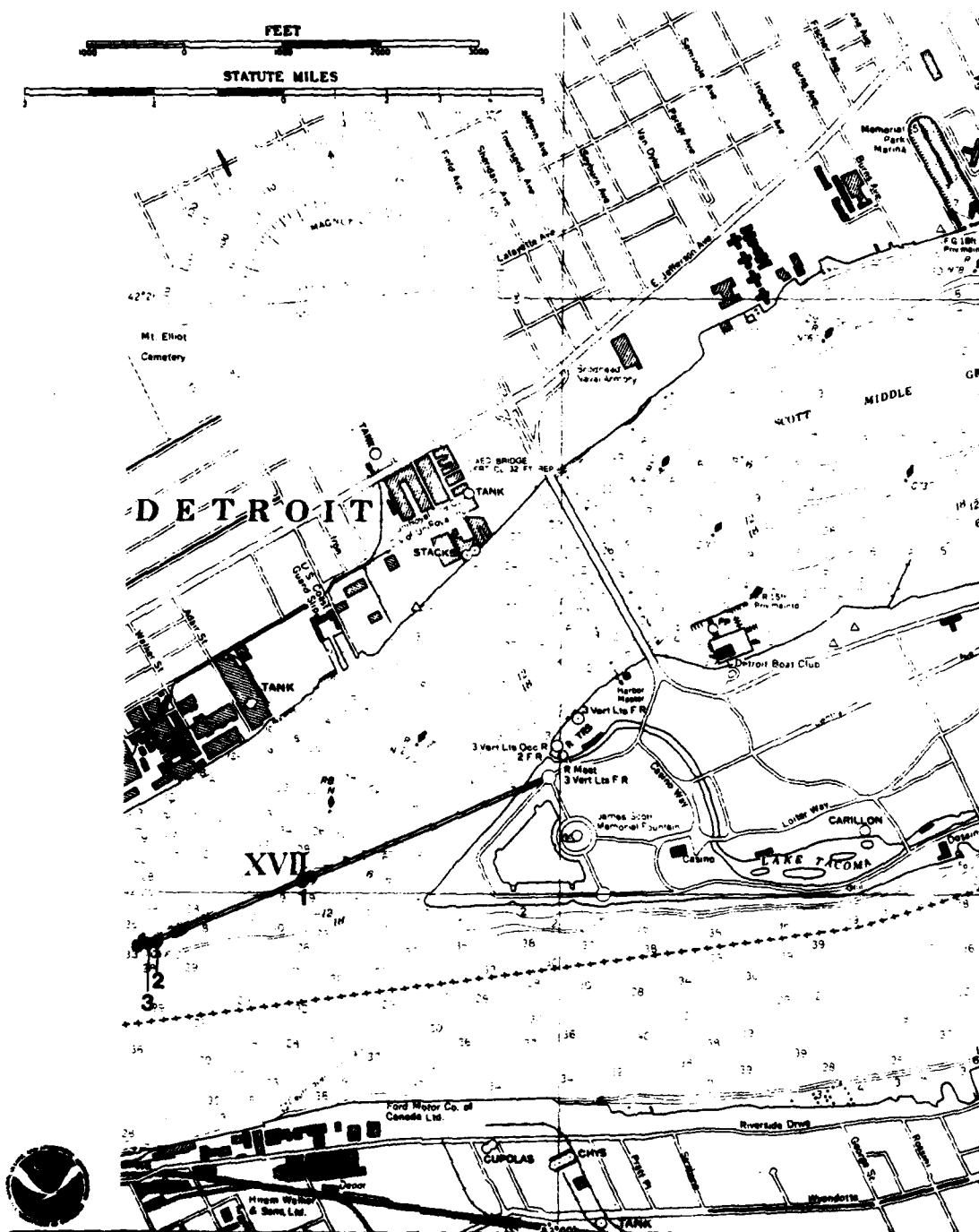
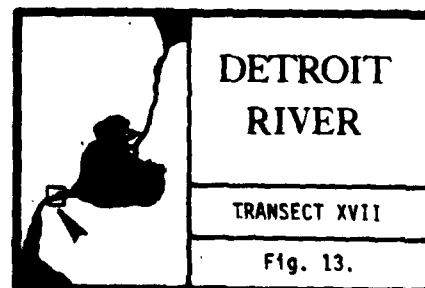


Fig. 13.

Transect XVII is below Belle Isle between buoy RB and a road intersection on Belle Isle about 2.5 miles downstream from transect XVI. Stations 1, 2, and 3 are in water 10, 12, and 18 feet deep, respectively, about 2600-3900 feet offshore.



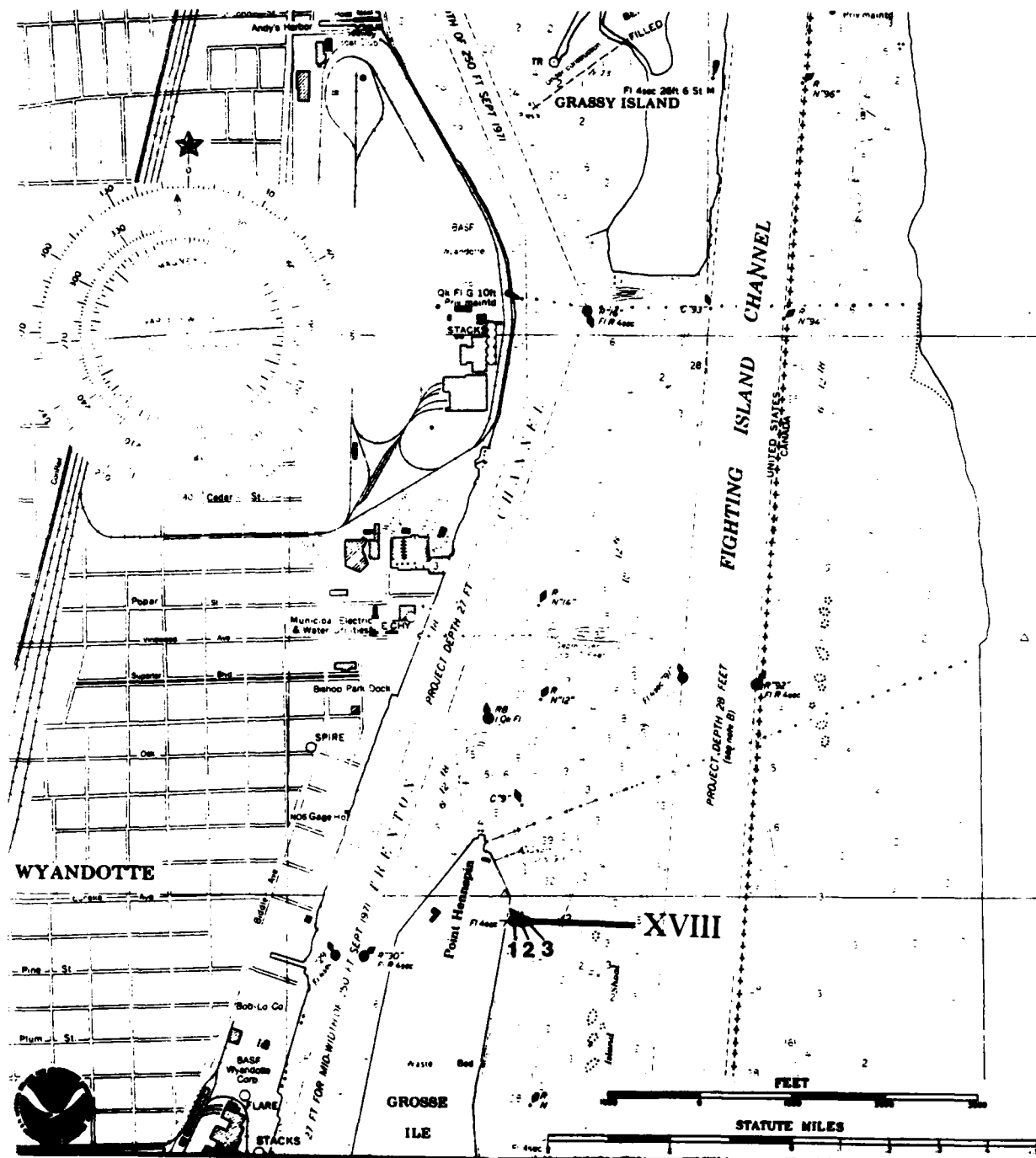
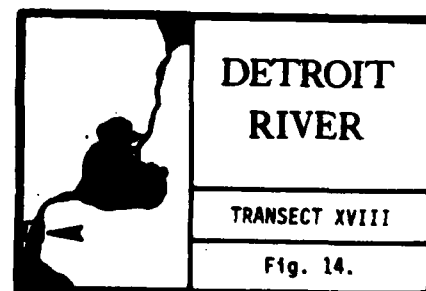


Fig. 14.

Transect XVIII is on the east side of the tip of Point Henry on a bearing of 275° from buoy 7 about 12.6 miles downstream from transect XVII. Stations 1, 2, and 3 are in water 6, 8, and 16 feet deep, respectively.



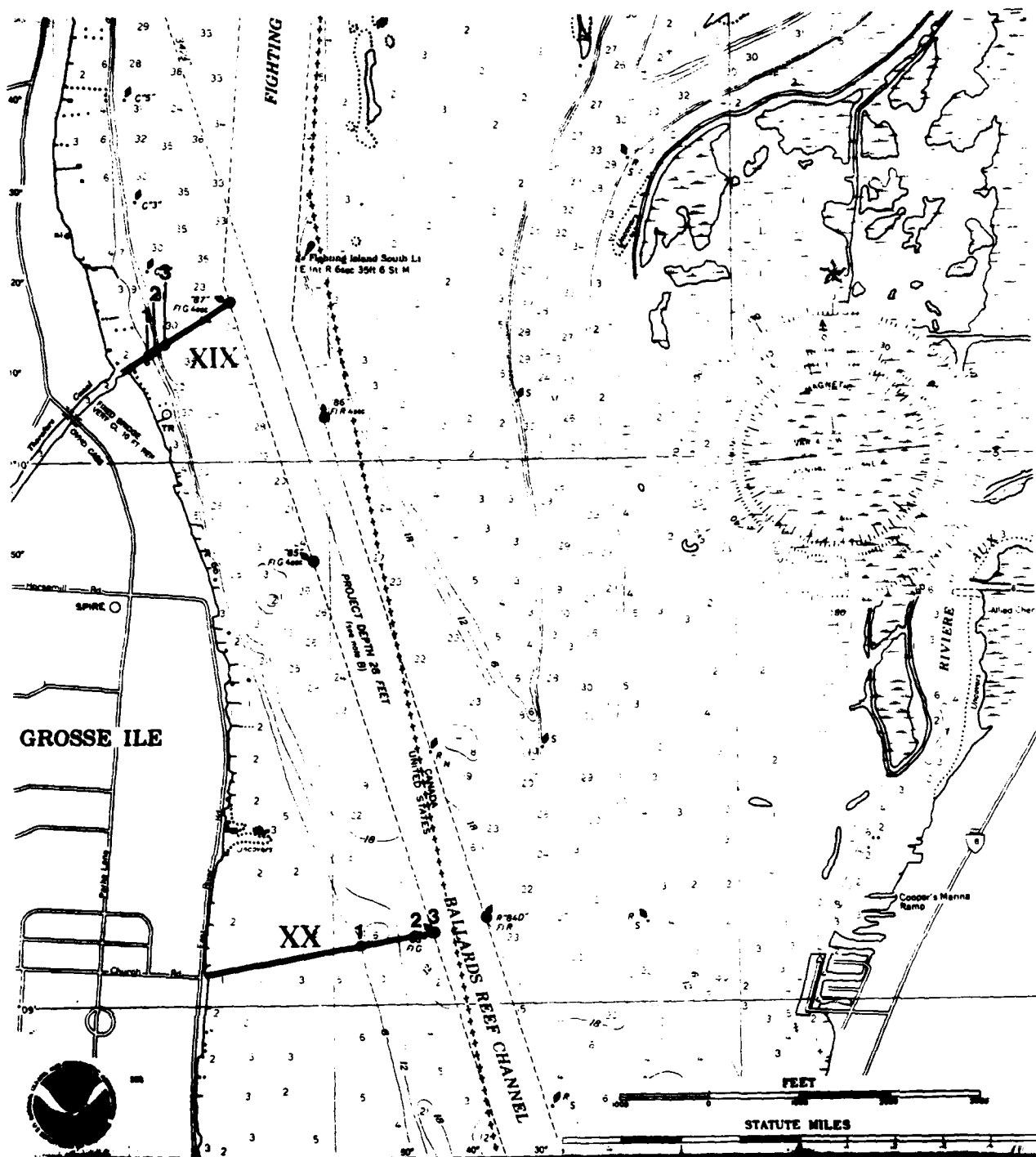
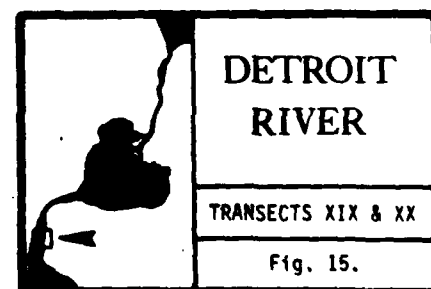


Fig. 15.

Transect XIX is adjacent to the Fighting Island Channel on a line between buoy 87 and the Thorofare Canal. Stations 1, 2, and 3 are in water 6, 12, and 20 feet deep, respectively, about 400-500 feet offshore. Transect XX is adjacent to the Ballards Reef Channel on a line between buoy 83 and Church Road on Grosse Ile. Stations 1, 2, and 3 are in water 5, 13, and 20 feet deep, respectively, about 1800-2600 feet offshore.



APPENDIX B

Macrozoobenthos Ponar Grab Data

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	1	STATION 1		
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		0	1	0	7
HYDRA					

ALL CNIDARIA					7
NEMATODA		0	3	2	34
OLIGOCHAETA					
NAIS		0	0	1	

OTHER		58	72	43	1198
ALL OLIGOCHAETA					
CLADOCERA		1	0	0	7
DAPHNIA					

ALL CLADOCERA					7
COPEPODA					
CYCLOPOIDIDAE		1	0	0	

LIMNOCALANUS		3	0	1	

ALL COPEPODA					34
OSTRACODA		0	1	0	7
AMPHIPODA					
GAMMARUS		0	1	3	

PONTOPOREIA HOYI		35	8	10	

ALL AMPHIPODA					393
TERRESTRIAL INSECT		1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 1 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	32	35	13	551	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	16	8	4		

SPHAERIUM	0	0	2		

ALL SPHAERIIDAE					207
ALL PELECYPODA					207

MACROZOOBENTHOS PONAR GRAB COUNT DATA						
ST. CLAIR RIVER		TRANSECT 1 STATION 2		5/ 3/83		
TAXON		GRAB COUNTS			ESTIMATED	
		1	2	3	NO./SQ. METER	
NEMATODA		5	9	31	310	
OLIGOCHAETA		54	73	68	1343	
POLYCHAETA						
MANAYUNKIA SPECIOSA		0	3	0	21	
ALL POLYCHAETA					21	
CLADOCERA						
DAPHNIA		0	1	0		
DAPHNIA PULEX		0	0	2		
ALL CLADOCERA					21	
COPEPODA						
DIAPYCNUS		2	2	3		
HARPACTICOIDA		0	0	2		
LIMNOCALANUS		0	2	1		
ALL COPEPODA					83	
OSTRACODA		0	3	0	21	
AMPHIPODA						
GAMMARUS		1	1	0		
HYALELLA AZTECA		0	0	1		
PONTOPOREIA HOYI		0	4	0		
ALL AMPHIPODA					48	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/83

TRANSECT 1 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TERRESTRIAL INSECT	0	1	1	14
DIPTERA				
CHIRONOMIDAE	153	87	139	2610
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	

ALL EPHEMEROPTERA				7
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	0	0	1	

OECETIS	0	1	0	

ALL TRICHOPTERA				14
GASTROPODA				
AMNICOLA	0	1	1	

ELIMIA LIVESCENS	0	1	3	

ALL GASTROPODA				41
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	15	7	

SPHAERIUM	0	0	1	

ALL SPHAERIIDAE				186
ALL PELECYPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	1	STATION 3		
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
FISH		2	0	0	14
FISH EGGS					
ALL FISH					14
CNIDARIA		0	0	1	7
HYDRA					
ALL CNIDARIA					7
RHABDOCOELA		0	0	1	7
NEMATODA		1	31	2	234
OLIGOCHAETA					
NAIS		0	0	2	
OTHER		16	130	56	1405
ALL OLIGOCHAETA					
CLADOCERA		0	0	1	7
DAPHNIA					
ALL CLADOCERA					7
COPEPODA					
DIATOMUS		4	5	2	
HARPACTICOIDA		0	1	0	
ALL COPEPODA					83
OSTRACODA		0	0	2	14

MACROZOBENTHOS PONAR GRAB COUNT DATA

5/ 3/83

TRANSECT 1 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	0	3	15	

PONTOPOREIA HOYI	0	2	1	

ALL AMPHIPODA				145
DIPTERA				
CHIRONOMIDAE	30	110	60	1377

TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	0	2	

ALL TRICHOPTERA				14
ACARINA				
GASTROPODA	0	2	2	28
AMNICOLA				

LYMNAEA	2	15	4	

ALL GASTROPODA	0	1	0	152
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	13	9	

SPHAERIUM	1	0	0	

ALL SPHAERIIDAE				269
ALL PELECYPODA				269

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT 2	STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
FISH EGGS	0	0	1		7
ALL FISH					7
CNIDARIA					
HYDRA	26	10	271		2114
ALL CNIDARIA					2114
RHABDOCOELA	56	40	36		909
NEMATODA	82	101	261		3058
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS	0	1	0		
ALL HIRUDINEA					7
OLIGOCHAETA					
NAIS	8	21	58		
SPIROSPERMA	48	63	124		
OTHER	2400	1808	1192		39405
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	5	0	0		34
ALL POLYCHAETA					34
CLADOCERA					
DAPHNIA	2	2	1		
DAPHNIA PULEX	0	0	1		
ILYOCRYPTUS	0	0	5		
ALL CLADOCERA					76

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 2 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPOIDIDAE					
CYCLOPS BICUSPIDATUS	0	0	1		
CYCLOPS VERNALIS	0	0	1		
DIATOMUS	8	2	19		
HARPACTICOIDA	81	40	262		
LIMNOCALANUS	0	0	2		
MACROCYCLOPS	0	0	1		
PARACYCLOPS	0	0	7		
ALL COPEPODA				2927	
OSTRACODA	0	0	6		41
AMPHIPODA					
GAMMARUS	11	4	6		
HYALELLA AZTECA	0	2	17		
PONTOPOREIA HOYI	0	1	2		
ALL AMPHIPODA				286	
ISOPODA					
ASELLUS	0	0	1		7
ALL ISOPODA					7
TERRESTRIAL INSECT	0	0	1		7

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 2 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
GERATOPOGONIDAE		0	0	2	
CHIRONOMIDAE	508	473	546		10516
EMPHIDIDAE	1	0	4		
PSYCHODIDAE	0	0	1		
ALL DIPTERA					10571
EPHEMEROPTERA					
EPHEMEROPTERA	0	0	2		
CAENIDAE					
CAENIS	2	1	1		

EPHEMERIDAE					
HEXAGENIA	3	1	2		

EPHEMERELLIDAE					
EPHEMERELLA	0	1	7		

BAETISCIDAE					
BAETISCA	0	1	0		

HEPTAGENIIDAE					
STENONEMA	0	0	2		

ALL EPHEMEROPTERA					158
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	0	0	2		

ALL COLEOPTERA					14
LEPIDOPTERA					
	3	4	7		96

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 2 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	0	1	0		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	15		
HYDROPSYCHE	0	0	6		
LEPTOCERIDAE					
OECEYIS	0	1	0		
SETODES	0	1	0		
OTHER	0	0	1		
POLYCENTROPODIDAE					
NEURECLIPSIS	0	1	6		
OTHER	0	0	1		227
ALL TRICHOPTERA					
ACARINA	1	0	23		165
TARDIGRADA	0	0	3		21
GASTROPODA					
AMNICOLA	20	77	68		
FERISSIA	0	0	4		
PHYSA	4	3	48		
VALVATA SINCERA	1	0	0		
ALL GASTROPODA					1549

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 2 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	3	14	22		

SPHAERIUM	0	0	5		

ALL SPHAERIIDAE					303
ALL PELECYPODA					303

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	2	STATION 2		
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	56	11	14		558

ALL CNIDARIA					558
RHABDOCOELA	6	6	3		103
NEMERTINEA	10	0	4		96
NEMATODA	42	28	33		709
OLIGOCHAETA					
NAIS	58	8	11		

SPIROSPERMA	60	38	53		

OTHER	117	231	144		4958
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	0	5		34

ALL POLYCHAETA					34
CLADOCERA					
DAPHNIA	2	1	1		

ILYOCRYPTUS	1	0	0		

ALL CLADOCERA					34

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 3/83
TRANSECT 2 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE				
DIAPTOMUS	0	1	0	
HARPACTICOIDA	3	2	4	
LIMNOCALANUS	25	3	13	
PARACYCLOPS	0	0	1	
ALL COPEPODA	1	1	0	372
DECAPODA				
ASTACIDAE	1	0	0	7
ALL DECAPODA				7
OSTRACODA	1	1	0	14
AMPHIPODA				
GAMMARUS	5	1	1	
HYALELLA AZTECA	3	6	2	
PONTOPOREIA HOYI	0	1	0	
ALL AMPHIPODA				131
ISOPODA				
ASELLUS	0	0	2	14
ALL ISOPODA				14
DIPTERA				
CHIRONOMIDAE	208	115	95	2879
EMPIDIDAE	1	24	15	3154
ALL DIPTERA				

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/83

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	3	10	4	

EPHEMERIDAE				
HEXAGENIA	2	1	0	

EPHEMERELLIDAE				
EPHEMERELLA	4	3	2	

BAETISCIDAE				
BAETISCA	0	1	0	

HEPTAGENIIDAE				
STENONEMA	1	0	0	

ALL EPHEMEROPTERA				213
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	1	0	

ALL COLEOPTERA				7
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	1	0	

HYDROPSYCHIDAE				
CHEUMATOPSYCHE	23	0	5	

HYDROPSYCHE	1	0	3	

LEPTOCERIDAE				
MYSTACIDES	0	2	0	

OECETIS	1	0	0	

POLYCENTROPODIDAE				
NEURECLIPSIS	4	3	0	

RHYACOPHILIDAE				
PROTOPTILA	0	0	2	

ALL TRICHOPTERA				317
ACARINA				
	3	11	7	145

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	14	6	15		
ELIMIA LIVESCENS	27	38	11		
PHYSA	8	0	2		
ALL GASTROPODA					833
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	3	15	0		124
ALL PELECYPODA					124

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	2	STATION 3		
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
FISH					
COTTUS BAIRDII		0	1	0	7
ALL FISH					7
CNIDARIA					
HYDRA		105	19	23	1012
ALL CNIDARIA					1012
RHABDOCOELA		8	0	1	62
NEMERTINEA		0	1	8	62
NEMATODA		8	6	2	110
OLIGOCHAETA					
NAIS		28	3	8	
SPIROSPERMA		0	3	5	
OTHER		149	16	39	1729
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	1	0	7
ALL POLYCHAETA					7
CLADOCERA					
DAPHNIA		2	0	1	21
ALL CLADOCERA					21

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 2 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	5	0	0		
DIAPTOMUS	7	1	2		
HARPACTICOIDA	42	0	0		
LIMNOCALANUS	1	1	2		
ALL COPEPODA				420	
OSTRACODA	1	0	0	7	
AMPHIPODA					
GAMMARUS	1	0	1		
HYALELLA AZTECA	7	2	0		
PONTOPOREIA HOYI	2	0	0		
ALL AMPHIPODA				90	
DIPTERA					
CHIRONOMIDAE	102	15	34		1040
EMPHIDAE	0	6	1		1088
ALL DIPTERA					
EPHEMEROPTERA					
CAENIDAE	0	1	2		
CAENIS					
EPHEMERELLIDAE					
EPHEMERELLA	10	3	0		
HEPTAGENIIDAE					
STENONEMA	0	4	0		
ALL EPHEMEROPTERA				138	

5/ 3/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	0	7
ALL COLEOPTERA				
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	1	
HYDROPSYCHIDAE	62	37	12	
CHELMATOPSYCHE				
HYDROPSYCHE	0	7	10	
LEPTOCERIDAE				
CERACLEA	0	0	2	
OECETIS	1	0	0	
RHYACOPHILIDAE				
PROTOPTILA	1	2	5	971
ALL TRICHOPTERA				
HEMIPTERA				
CORIXIDAE	1	0	0	7
ACARINA	19	0	1	138
GASTROPODA				
ANNICOLA	2	3	3	
ELIMIA LIVESCENS	27	1	60	
LYNNAEA	0	0	1	
ALL GASTROPODA				668
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	17	117
ALL PELECYPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	3	STATION 1		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
FISH					
FISH EGGS		3	7	3	90
ALL FISH					90
CNIDARIA					
HYDRA		7	9	4	138
ALL CNIDARIA					138
RHABDOCOELA		1	3	0	28
NEMERTINEA		0	0	7	48
NEMATODA		6	1	16	158
OLIGOCHAETA		83	17	279	2610
CLADOCERA					
DAPHNIA		0	2	0	14
ALL CLADOCERA					14
COPEPODA					
CYCLOPOIDIDAE		1	0	0	
CYCLOPS BICUSPIDATUS		0	0	1	
DIAPTOMUS		13	5	2	
HARPACTICOIDA		0	0	1	
LIIMOCALANUS		1	0	1	
ALL COPEPODA					172

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/83

TRANSECT 3 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	0	0	1	

HYALELLA AZTECA	0	0	1	

ALL AMPHIPODA				14
DIPTERA				
CHIRONOMIDAE	103	109	214	2934
EMPIDIDAE	0	0	1	2941
ALL DIPTERA				
TRICHOPTERA				
LEPTOCERIDAE	0	0	1	
CERACLEA				

MYSTACIDES	1	0	2	

ALL TRICHOPTERA				28
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	4	0	0	28

ALL GASTROPODA				28
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	1	7

ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	3	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
FISH					
FISH EGGS				7 4 0	76
ALL FISH					76
CNIDARIA					
HYDRA				3 9 5	117
ALL CNIDARIA					117
NEMERTINEA				0 1 0	7
NEMATODA				8 1 0	62
OLIGOCHAETA					
NAIS				0 0 1	
OTHER				97 7 18	847
ALL OLIGOCHAETA					
CLADOCERA					
DAPHNIA				1 0 1	14
ALL CLADOCERA					14
COPEPODA					
CYCLOPS BICUSPIDATUS				0 1 2	
DIAPYCNUS				3 8 7	
LIMNOCALANUS				1 1 0	
ALL COPEPODA					158
AMPHIPODA					
GAMMARUS				1 0 0	
MYALELLA AZTECA				1 0 0	
ALL AMPHIPODA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
TRANSECT 3 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA	149	378	107	4366	
CHIRONOMIDAE	3	2	7	4449	
EMPIDIDAE					
ALL DIPTERA					
TRICHOPTERA					
HYDROPSYCHIDAE	0	0	1		
HYDROPSYCHE					
LEPTOCERIDAE	3	0	0		
CERACLEA	0	1	0		

OECETIS					

RHYACOPHILIDAE	0	1	0		
PROTOPTILA					41

ALL TRICHOPTERA	0	1	0		7
ACARINA					

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/83
ST. CLAIR RIVER	TRANSECT	3	STATION 3		
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
FISH EGGS	2	12	2		110

ALL FISH					110
CNIDARIA					
HYDRA	1	1	2		28

ALL CNIDARIA					28
NEMATODA					
	2	2	3		48
OLIGOCHAETA					
	9	7	1		117
COPEPODA					
CYCLOPOIDIDAE	0	0	2		

DIAPTOMUS	3	9	4		

LIMNOCALANUS	0	2	0		

ALL COPEPODA					138
OSTRACODA					
	0	1	0		7
DIPTERA					
CHIRONOMIDAE	30	25	13		468
EMPIDIDAE	3	1	0		496
ALL DIPTERA					
ACARINA	1	0	0		7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT	4	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
FISH EGGS	0	1	0	7	

ALL FISH				7	
CNIDARIA					
HYDRA	15	33	67	792	

ALL CNIDARIA				792	
RHABDOCOELA	1	0	3	28	
NEMERTINEA	0	1	0	7	
NEMATODA	205	93	106	2782	
HIRUDINEA					
ERPOBDELLIDAE	1	0	0	7	
OLIGOCHAETA					
NAIS	32	88	96		

SPIROSPERMA	48	108	56		

STYLARIA	0	0	1		

OTHER	160	118	96	5530	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	1	0	7	

ALL POLYCHAETA				7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 4 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
DAPHNIA	0	2	1	21	
ALL CLADOCERA				21	
COPEPODA					
DIAPTOMUS	9	8	11		
HARPACTICOIDA	4	4	20		
LIMNOCALANUS	0	0	2		
ALL COPEPODA				399	
OSTRACODA	1	1	0	14	
AMPHIPODA					
GAMMARUS	0	0	11		
HYALELLA AZTECA	0	0	1		
ALL AMPHIPODA				83	
DIPTERA					
CHIRONOMIDAE	51	81	102	1611	
EPHEMEROPTERA					
EPHEMERIDAE	0	1	0		
HEXAGENIA					
EPHEMERELLIDAE					
EPHEMERELLA	0	1	4		
ALL EPHEMEROPTERA				41	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	2	0	1	
LEPTOCERIDAE				
MYSTACIDAE	0	1	0	
OTHER				
ALL TRICHOPTERA	1	0	0	34
ACARINA				
	2	1	8	76
GASTROPODA				
AMNICOLA	62	301	112	
ELIMIA LIVESCENS	13	15	22	
GYRAULUS	3	2	7	
LYNNAEA	0	1	15	
PHYSA	2	2	6	
VALVATA TRICARINATA	40	104	76	
ALL GASTROPODA				5392
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	124	53	
SPHAERIUM	0	0	2	
ALL SPHAERIIDAE				1405
ALL PELECYPODA				1405

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 5/83
ST. CLAIR RIVER	TRANSECT	4	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		
FISH						
FISH EGGS	155	0	0	1067		

ALL FISH				1067		
PORIFERA						
SPONGILLA	+	0	0	+		

ALL PORIFERA				0		
CNIDARIA						
HYDRA	369	45	411	5681		

ALL CNIDARIA				5681		
RHABDOCOELA	28	5	0	227		
NEMERTINEA	0	12	0	83		
NEMATODA	55	42	39	937		
HIRUDINEA						
HIRUDINEA	1	0	0	7		
OLIGOCHAETA						
NAIS	95	91	68			

SPIROSPERMA	22	4	2			

OTHER	339	487	222			
ALL OLIGOCHAETA				9159		

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 4 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	5	0	1		
DIAPYCNUS	13	3	9		
HARPACTICOIDA	32	18	51		
LIMNOCALANUS	3	0	1		
ALL COPEPODA				937	
OSTRACODA	27	3	0		207
AMPHIPODA					
GAMMARUS	7	0	0		
HYALELLA AZTECA	4	0	0		
PONTOPOREIA HOYI	8	0	2		
ALL AMPHIPODA				145	
ISOPODA					
ASELLUS	1	0	0		7
ALL ISOPODA					7
TERRESTRIAL INSECT	6	0	0		41
DIPTERA					
CEPHALOPODONIDAE	3	0	0		
CHIRONOMIDAE	389	67	125		4001
EMBIIDAE	2	4	0		
ALL DIPTERA					4063

MACROZOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 4 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	0	0	

EPHEMERELLIDAE				
EPHEMERELLA	2	3	5	

HEPTAGENIIDAE				
STENONEMA	1	0	2	

ALL EPHEMEROPTERA				103
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	4	1	0	

HYDROPSYCHE	6	2	4	

OTHER	1	0	0	
LEPTOCERIDAE	1	1	0	
CERACLEA	1	0	0	

NECTOPSYCHE				

ALL TRICHOPTERA				145
ODONATA				
GOMPHIDAE				
GOMPHUS	1	0	0	7

ALL ODONATA				7
ACARINA	10	16	9	241
TARDIGRADA	2	0	1	21

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 4 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	2	2	0		
ELIMIA LIVESCENS	2	30	0		
GYRAULUS	5	1	0		
PHYSA	5	5	4		
ALL GASTROPODA				386	
PELECYPODA					
SPHAERIIDAE	7	8	1		110
PISIDIUM					
ALL PELECYPODA					110

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT 4	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA					
ALL CNIDARIA	275	274	254		5530
					5530
RHABDOCOELA	3	5	3		76
NEMERTINEA	8	0	0		55
NEMATODA	14	15	3		220
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS	1	0	0		
ALL HIRUDINEA					7
OLIGOCHAETA					
NAIS	102	141	33		
SPIROSPERMA	1	0	3		
STYLARIA	1	0	0		
OTHER	399	101	113		6157
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	2	0		14
ALL POLYCHAETA					14
CLADOCERA					
DAPHNIA	0	1	0		7
ALL CLADOCERA					7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 4 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	2	3		

DIAPTOMUS	5	1	7		

HARPACTICOIDA	32	3	6		

LIMNOCALANUS	0	1	0		

ALL COPEPODA				420	
OSTRACODA	1	0	0	7	
AMPHIPODA					
GAMMARUS	7	1	6		

HYALELLA AZTECA	0	2	6		

PONTOPOREIA HOYI	5	0	2		

ALL AMPHIPODA				200	
TERRESTRIAL INSECT	0	1	1	14	
DIPTERA					
CERATOPOGONIDAE	0	1	0		
CHIRONOMIDAE	158	110	95	2500	
EMPIDIDAE	1	3	0		
ALL DIPTERA				2534	

5/ 5/83

MACROZOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
EPHEMERELLIDAE				
EPHEMERELLA	8	6	10	
BAETISCIDAE				
BAETISCA	0	0	1	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				186
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	10	5	2	
HYDROPSYCHE	2	0	1	
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
OECETIS	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	2	0	0	
ALL TRICHOPTERA				165
PLECOPTERA				
	2	0	0	14
ACARINA	11	12	35	399

MACROZOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 4 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	0	0	1	
ELIMIA LIVESCENS	2	0	11	
GYRAULUS	2	1	0	
LYMNAEA	0	0	1	
PHYSA	2	0	1	
ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	1	2	34
ALL PELECYPODA				34

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT 5 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		99	71	638	5564
HYDRA					

ALL CNIDARIA					5564
RHABDOCOELA		9	52	36	668
TRICLADIDA		2	0	20	152
NEMERTINEA		2	0	0	14
NEMATODA		52	262	196	3512
HIRUDINEA					
ERPOBDELLIDAE		1	0	0	
GLOSSIPHONIIDAE		0	0	1	
HELOBDELLA TRISERIALIS					

PISCICOLIDAE		0	1	0	
PISCICOLA					

OTHER		1	0	0	
ALL HIRUDINEA					28
OLIGOCHAETA					
NAIS		53	11	39	

SPIROSPERMA		72	44	74	

OTHER		677	825	613	
ALL OLIGOCHAETA					16583

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 5 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
ILYOCRYPTUS	0	2	16	124	

ALL CLADOCERA				124	
COPEPODA					
DIAPYOMUS	13	14	3		

HARPACTICOIDA	4	7	0		

LIMNOCALANUS	1	3	16		

PARACYCLOPS	0	2	0		

UNIDENTIFIED NAUPLII	0	1	0		

ALL COPEPODA				441	
DECAPODA					
ORCONECTES	1	0	0	7	

ALL DECAPODA				7	
OSTRACODA					
	0	5	1	41	
AMPHIPODA					
GAMMARUS	51	4	35		

HYALELLA AZTECA	5	3	0		

PONTOPOREIA HOYI	1	1	1		

ALL AMPHIPODA				696	
TERRESTRIAL INSECT					
	0	0	1	7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 5 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	452	225	403		7438
EMPHIDIDAE	0	0	1		
ALL DIPTERA					7444
EPHEMEROPTERA					
CAENIDAE					
CAENIS	7	5	25		
EPHEMERIDAE					
HEXAGENIA	12	12	16		
EPHEMERELLIDAE					
EPHEMERELLA	40	4	17		
HEPTAGENIIDAE					
STENONEMA	0	0	2		
ALL EPHEMEROPTERA					964
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	1	1	3		
ALL COLEOPTERA					34
LEPIDOPTERA					
	1	1	1		21

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 5 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE	14	0	2		
BRACHYCENTRUS					
HYDROPSYCHIDAE	1	0	0		
CHEUMATOPSYCHE					
HYDROPSYCHE	6	0	1		
LEPTOCERIDAE	1	0	2		
CERACLEA	1	0	0		
NECTOPSYCHE	1	9	0		
DECETIS	2	0	0		
TRIAENODES					
ALL TRICHOPTERA				275	
HEMIPTERA					
CORIXIDAE	0	0	1		7
ODONATA					
GOMPHIDAE	0	1	0		7
STYLURUS NOTATUS					
ALL ODONATA					
PLECOPTERA	1	0	1		14
ACRINA	4	0	17		145

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 5 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	33	140	110	
ELIMIA LIVESCENS	8	1	0	
GYRAULUS	3	0	24	
PHYSA	9	7	34	
VALVATA TRICARINATA	3	20	3	
ALL GASTROPODA				2720
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	17	47	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				461
ALL PELECYPODA				461

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT	5	STATION 2		
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	0	1	79	551	
HYDRA					

ALL CNIDARIA				551	
RHABDOCOELA	1	0	0	7	
NEMATODA	2	5	26	227	
OLIGOCHAETA					
NAIS	0	23	59		

OTHER	35	15	116		
ALL OLIGOCHAETA				1708	
CLADOCERA					
BOSMINA	0	0	1		

DAPHNIA	0	6	0		

ALL CLADOCERA				48	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	0	2		

DIAPTOMUS	1	5	6		

HARPACTICOIDA	0	0	11		

LIMNOCALANUS	2	2	0		

ALL COPEPODA				200	
AMPHIPODA					
GAMMARUS	0	0	1		

HYALELLA AZTECA	0	1	2		

ALL AMPHIPODA				28	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 5 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TERRESTRIAL INSECT	1	0	0	7	
DIPTERA					
CHIRONOMIDAE	30	35	90	1067	
EMPIDIDAE	0	0	1		
ALL DIPTERA				1074	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	0	2	0		

EPHEMERELLIDAE					
EPHEMERELLA	0	21	43		

HEPTAGENIIDAE					
STENONEMA	0	0	8		

ALL EPHEMEROPTERA				510	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	4	13		

HYDROPSYCHE	0	0	22		

ALL TRICHOPTERA				269	
PLECOPTERA					
PERLODIDAE	0	0	1	7	

ALL PLECOPTERA				7	
ACARINA					
	0	1	9	69	
GASTROPODA					
PHYSA	0	0	1	7	

ALL GASTROPODA				7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 5 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

ALL PELECYPODA	0	0	3	21
				21

MACROZOBENTHOS PONAR GRAB COUNT DATA						5/ 5/83
ST. CLAIR RIVER	TRANSECT	5 STATION 3	GRAB COUNTS			ESTIMATED
TAXON			1	2	3	NO./SQ. METER
FISH						
ETHEOSTOMA CAERULEUM			0	0	1	

FISH EGGS			0	0	2	

ALL FISH						21
CNIDARIA						
HYDRA			3	15	23	282

ALL CNIDARIA						282
RHABDOCOELA						
			1	0	0	7
NEMATODA						
			2	1	2	34
OLIGOCHAETA						
NAIS			0	0	4	

SPIROSPERMA			0	0	1	

OTHER			26	53	65	1026
ALL OLIGOCHAETA						
CLADOCERA						
BOSMINA			0	1	0	

DAPHNIA			1	0	3	

ALL CLADOCERA						34
COPEPODA						
CYCLOPS BICUSPIDATUS			0	0	2	

DIATOMUS			8	9	6	

LIMNOCALANUS			0	1	1	

ALL COPEPODA						186

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
HYALELLA AZTECA	1	0	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	44	2	195	1660
EMPIDIDAE	4	0	0	
ALL DIPTERA				1687
EPEMEROPTERA				
EPEMERELLIDAE				
EPEMERELLA	2	0	5	
ALL EPEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	6	
LEPTOCERIDAE				
CERACLEA	0	0	1	
ALL TRICHOPTERA				48
PLECOPTERA				
	0	0	1	7
ACARINA				
	1	0	2	21
GASTROPODA				
AMNICOLA	0	1	0	7
ALL GASTROPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT 6 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		1109	838	428	16356
HYDRA					16356
ALL CNIDARIA					
RHABDOCOELA		2	3	6	76
TRICLADIDA		23	30	7	413
NEMERTINEA		0	1	0	7
NEMATODA		86	40	11	943
OLIGOCHAETA					
NAIS		4	0	3	
SPIROSPERMA		12	25	40	
OTHER					
ALL OLIGOCHAETA		374	166	192	5620
CLADOCERA					
DAPHNIA		0	2	2	
DAPHNIA AMBIGUA		1	0	0	
ILYOCRYPTUS		9	3	1	
ALL CLADOCERA					124

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPOIDIDAE	0	3	0		

CYCLOPS BICUSPIDATUS	14	0	0		

DIAPTOMUS	17	12	17		

HARPACTICOIDA	27	15	8		

LIMNOCALANUS	1	5	1		

ALL COPEPODA				826	
OSTRACODA	0	0	2	14	
AMPHIPODA					
GAMMARUS	108	129	61		

HYALELLA AZTECA	0	3	0		

PONTOPOREIA HOYI	1	0	0		

ALL AMPHIPODA				2080	
ISOPODA					
ASELLUS	1	3	0	28	

ALL ISOPODA				28	
TERRESTRIAL INSECT	1	0	0	7	
DIPTERA					
CERATOPOGONIDAE	4	1	1		
CHIRONOMIDAE	437	718	879	14007	
EMPIDIDAE	1	0	0		
ALL DIPTERA				14056	

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	1	6	0		
EPHEMERIDAE					
HEXAGENIA	4	6	1		
ALL EPHEMEROPTERA				124	
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	1	0	0		
ALL COLEOPTERA				7	
TRICHOPTERA					
LEPTOCERIDAE					
CERACLEA	1	2	0		
MYSTACIDES	0	1	1		
NECTOPSYCHE	1	0	0		
OECETIS	9	35	13		
SETODES	0	0	1		
POLYCENTROPODIDAE					
POLYCENTROPUS	1	0	0		
ALL TRICHOPTERA				448	
ACARINA					
GASTROPODA					
AMNICOLA	22	56	82		
ELIMIA LIVESCENS	6	32	11		
GYRAULUS	13	14	8		
PHYSA	4	6	7		
VALVATA TRICARINATA	18	6	1		

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/ 5/83	
TRANSECT 6 STATION 1 (CONT'D)			
TAXON	GRAB COUNTS		ESTIMATED
	1	2 3	NO./SQ. METER
-----	-----		-----
PELECYPODA			
SPHAERIIDAE	6	23 13	
PISIDIUM			

SPHAERIUM	0	4 1	

ALL SPHAERIIDAE			324
ALL PELECYPODA			324

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT 6	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
COTTUS BAIRDII	0	0	1		

FISH EGGS	9	0	0		

ALL FISH					69
CNIDARIA					
HYDRA	2276	3303	2754		57387

ALL CNIDARIA					57387
RHABDOCOELA	58	17	56		902
NEMERTINEA	1	0	1		14
NEMATODA	54	55	31		964
HIRUDINEA					
PISCICOLIDAE					
PISCICOLA MILNERI	0	0	1		

ALL HIRUDINEA					7
OLIGOCHAETA					
NAIS	32	52	95		

SPIROSPERMA	41	56	105		

OTHER	605	706	536		15343
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	0	2		14

ALL POLYCHAETA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CLADOCERA				
BOSMINA	0	1	0	

DAPHNIA	0	0	1	

DAPHNIA GALEATA MENDOTAE	0	1	0	

DAPHNIA PULEX	0	2	0	

ILYOCRYPTUS	8	14	9	

ALL CLADOCERA				255
COPEPODA				
CYCLOPS BICUSPIDATUS	0	18	24	

DIAPTOMUS	17	29	16	

HARPACTICOIDA	81	100	24	

LIMNOCALANUS	3	3	8	

PARACYCLOPS	0	2	0	

ALL COPEPODA				2238
OSTRACODA	8	2	10	138
AMPHIPODA				
GAMMARUS	55	24	45	

H.ALELLA AZTECA	4	1	8	

PONTOPOREIA HOYI	2	1	1	

ALL AMPHIPODA				971
ISOPODA				
ASELLUS	1	0	2	21

ALL ISOPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 6 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CERATOPOGONIDAE	0	0	2	
CHIRONOMIDAE	469	415	817	11714
EMPIDIDAE	1	0	0	
ALL DIPTERA				11735
EPHEMEROPTERA				
CAENIDAE	9	1	9	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	66	20	26	
EPHEMERELLIDAE				
EPHEMERELLA	3	1	10	
HEPTAGENIIDAE				
STENONEMA	0	0	1	
ALL EPHEMEROPTERA				1005
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	3	
ALL COLEOPTERA				28

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	5	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	0	1	
LEPTOCERIDAE				
CERACLEA	3	5	2	
MYSTACIDES	0	0	1	
OECETIS	0	1	1	
TRIAENODES	0	1	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	2	3	200
ALL TRICHOPTERA				
ACARINA	2	0	1	21
GASTROPODA				
AMNICOLA	4	5	15	
ELIMIA LIVESCENS	1	1	12	
GYRAULUS	0	0	3	
PHYSA	7	5	21	
ALL GASTROPODA				510
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	3	10	117
ALL PELECYPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT	6	STATION 3		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA				21 0 14	241
HYDRA					
ALL CNIDARIA					241
RHABDOCELA				14 10 10	234
NEMATODA				34 83 68	1274
OLIGOCHAETA					
SPIROSPERMA FEROX				62 46 84	
OTHER				0 46 59	
ALL OLIGOCHAETA					2045
POLYCHAETA					
MANAYUNKIA SPECIOSA				0 0 1	7
ALL POLYCHAETA					7
CLADOCERA					
BOSMINA				0 0 1	
DAPHNIA				0 1 0	
DAPHNIA AMBIGUA				0 1 0	
ALL CLADOCERA					21
COPEPODA					
CYCLOPOIDIDAE				0 6 0	
DIAPTOMUS				3 34 9	
HARPACTICOIDA				1 0 0	
LIMNOCALANUS				3 0 3	
ALL COPEPODA					406

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	11	0	3	

PONTOPOREIA HOYI	0	0	1	

ALL AMPHIPODA				103
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	2	0	0	
CHIRONOMIDAE	327	183	30	3719
EMPIDIDAE	8	0	4	
ALL DIPTERA				3822
EPHEMEROPTERA				
EPHEMERIDAE	16	0	2	
HEXAGENIA				

EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	

ALL EPHEMEROPTERA				131
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	1	1	

ALL COLEOPTERA				21
TRICHOPTERA				
LEPTOCERIDAE	0	0	1	
MYSTACIDES				

OECETIS	0	0	1	

TRIAENODES	0	0	1	

ALL TRICHOPTERA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 6 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	0	0	3	21	
GASTROPODA					
AMNICOLA	48	2	5		
ELIMIA LIVESCENS	5	0	5		
GYRAULUS	22	0	0		
PHYSA	4	0	0		
SOMATOGYRUS SUBGLOBOSUS	1	0	0		
VALVATA TRICARINATA	1	1	0		
ALL GASTROPODA				647	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	24	9	18		
SPHAERIUM	8	3	3		
ALL SPHAERIIDAE				448	
ALL PELECYPODA				448	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT 7	STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	2217	1614	3411	49873	
HYDRA					
ALL CNIDARIA				49873	
RHABDOCELA	76	13	63	1047	
TRICLADIDA	0	16	0	110	
NEMERTINEA	0	3	0	21	
NEMATODA	24	104	38	1143	
OLIGOCHAETA					
NAIS	2	8	0		

SPIROSPERMA	40	46	54		

OTHER	405	287	489	9166	
ALL OLIGOCHAETA					
CLADOCERA					
BOSMINA	1	0	0		

DAPHNIA	2	0	0		

DAPHNIA PULEX	2	0	0		

DAPHNIA SCHODLERI	1	0	0		

ILYOCRYPTUS	3	0	1		

ALL CLADOCERA				69	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 7 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	9	0	3		

DIAPYCNUS	27	5	61		

HARPACTICOIDA	2	2	7		

LIMNOCALANUS	4	0	0		

PARACYCLOPS	1	0	0		

ALL COPEPODA				833	
OSTRACODA	1	0	8		62
AMPHIPODA					
GAMMARUS	101	113	254		

HYALELLA AZTECA	1	2	14		

PONTOPOREIA HOYI	1	0	0		

ALL AMPHIPODA				3347	
ISOPODA					
ASELLUS	0	1	10		76

ALL ISOPODA					76
DIPTERA					
CERATOPOGONIDAE	3	0	2		
CHIRONOMIDAE	638	380	1221		15419
ALL DIPTERA					15454

5/ 5/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	34	21	101	

EPHEMERIDAE				
HEXAGENIA	2	2	12	

EPHEMERELLIDAE				
EPHEMERELLA	2	2	2	

ALL EPHEMEROPTERA				1226
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	13	7	7	

HYDROPSYCHIDAE				
CHEMATOPSYCHE	3	1	1	

HYDROPSYCHE	2	1	1	

LEPTOCERIDAE				
CERACLEA	2	1	2	

NECTOPSYCHE	0	0	1	

OECETIS	4	0	9	

SETOES	1	0	0	

TRIAENODES	1	0	0	

LIMNIPHILIDAE				
PYCNOPSYCHE	0	0	1	

POLYCENTROPODIDAE				
NEURECLIPSIS	1	2	2	

ALL TRICHOPTERA				434
ACARINA				
	5	0	1	41

MACROZOEBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 7 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	58	47	228		
ELIMIA LIVESCENS	39	12	38		
GYRAULUS	20	21	23		
PHYSA	20	6	26		
VALVATA TRICARINATA	1	0	0		
ALL GASTROPODA				3712	
PELECYPODA					
SPHAERIIDAE	62	29	97		
PISIDIUM	1	1	1		
SPHAERIUM					
ALL SPHAERIIDAE				1315	
ALL PELECYPODA				1315	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					
ST. CLAIR RIVER		TRANSECT 7 STATION 2		5/ 5/83	
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		1515	1492	233	22313
HYDRA					22313
ALL CNIDARIA					22313
RHABDOCOELA		13	23	5	282
NEMERTINEA		27	0	1	193
NEMATODA		225	49	78	2424
OLIGOCHAETA					
NAIS		19	21	5	

SPIROSPERMA		70	55	5	

OTHER		203	261	23	4559
ALL OLIGOCHAETA					
CLADOCERA					
DAPHNIA PULEX		0	2	0	

DAPHNIA SCHODLERI		0	1	0	

ALL CLADOCERA					21
COPEPODA					
CYCLOPS BICUSPIDATUS		0	6	0	

DIAPTOMUS		8	12	0	

HARPACTICOIDA		0	2	0	

LIIMOCALANUS		3	1	0	

ALL COPEPODA					220

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 9/83
TRANSECT 7 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
DECAPODA				
ASTACIDAE	1	0	0	7

ALL DECAPODA				7
OSTRACODA				
	0	1	0	7
AMPHIPODA				
GAMMARUS	57	49	31	

HYALELLA AZTECA	3	0	3	

ALL AMPHIPODA				985
TERRESTRIAL INSECT				
	0	1	3	28
DIPTERA				
CHIRONOMIDAE	343	267	39	4469
EMPHIDAE	0	2	5	
ALL DIPTERA				4518
EPHEMEROPTERA				
CAENIDAE	7	5	18	
CIENIS				

EPHEMERIDAE				
HEXAGENIA	13	12	9	

EPHEMERELLIDAE				
EPHEMERELLA	11	4	26	

HEPTAGENIIDAE				
STENONEMA	1	0	1	

ALL EPHEMEROPTERA				737

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	4	7	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	4	17	9	
HYDROPSYCHE	5	8	1	
HYDROPTILIDAE				
HYDROPTILA	0	0	1	
LEPTOCERIDAE				
CERACLEA	9	3	2	
MYSTACIDES	0	1	0	
OECETIS	8	0	0	
TRIAENODES	2	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	3	7	11	
ALL TRICHOPTERA				702
PLECOPTERA				
PERLODIDAE	0	1	0	7
A/L PLECOPTERA				7
ACARINA	2	1	5	55
GASTROPODA				
ANNICOLA	18	15	6	
ELIMIA LIVESCENS	87	65	32	
GYRAULUS	0	1	0	
PHYSA	1	4	0	
ALL GASTROPODA				1577

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 7 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	31	6	

SPHAERIUM	7	10	8	

ALL SPHAERIIDAE				496
ALL PELECYPODA				496

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
ST. CLAIR RIVER	TRANSECT 7	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH	1	0	0	7	
FISH EGGS				7	
ALL FISH				7	
CNIDARIA					
HYDRA	27	2	2	213	
ALL CNIDARIA				213	
RHABDOCELA	0	0	14	96	
NEMERTINEA	11	7	0	124	
NEMATODA	624	267	230	7720	
OLIGOCHAETA					
NAIS	0	3	1		
SPIROSPERMA	7	0	0		
OTHER	28	6	32	530	
ALL OLIGOCHAETA					
CLADOCERA					
DAPHNIA	3	0	0	21	
ALL CLADOCERA				21	
COPEPODA					
DIAPYCNUS	0	14	5		
LIMNOCALANUS	0	1	4		
ALL COPEPODA				165	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OSTRACODA	3	0	0	21
AMPHIPODA				
GAMMARUS	12	5	0	
HYALELLA AZTECA	1	0	7	
ALL AMPHIPODA				172
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	23	10	30	434
EMPHIDAE	0	1	2	
ALL DIPTERA				455
EPHEMEROPTERA				
CAENIDAE	2	1	0	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	3	4	12	
EPHEMERELLIDAE				
EPHEMERELLA	3	7	0	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				227

5/ 5/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	1	

HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	

HYDROPSYCHE	0	1	0	

LEPTOCERIDAE				
CERACLEA	1	0	0	

POLYCENTROPODIDAE				
NEURECLIPSIS	1	1	0	

ALL TRICHOPTERA				41
ACARINA				
	1	0	0	7
GASTROPODA				
AMNICOLA	40	4	37	

ELIMIA LIVESCENS	23	3	3	

ALL GASTROPODA				758
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	6	1	9	110

ALL PELECYPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT 8 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		1008	155	136	8946
HYDRA					

ALL CNIDARIA					8946
RHABDOCOELA		10	347	185	3733
TRICLADIDA		4	16	4	165
NEMERTINEA		0	2	0	14
NEMATODA		19	48	38	723
HIRUDINEA					
GLOSSIPHONIIDAE					
GLOSSIPHONIA COMPLANATA		1	1	0	

ALL HIRUDINEA					14
OLIGOCHAETA					
NAIS		2	17	0	

SPIROSPERMA		74	196	53	
OTHER					
ALL OLIGOCHAETA		157	718	354	10819
POLYCHAETA					
MANAYUNKIA SPECIOSA		48	6	36	620

ALL POLYCHAETA					620

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CLADOCERA				
ILYOCRYPTUS	0	0	5	34

ALL CLADOCERA				34
COPEPODA				
DIAPTOMUS	17	24	1	

HARPACTICOIDA	48	17	21	

LIMNOCALANUS	0	0	1	

PARACYCLOPS	0	1	0	

ALL COPEPODA				895
OSTRACODA	32	9	0	282
AMPHIPODA				
GAMMARUS	167	258	48	

HYALELLA AZTECA	37	10	0	

ALL AMPHIPODA				3581
ISOPODA				
ASELLUS	69	45	4	813

ALL ISOPODA				813
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	618	633	196	9965
ALL DIPTERA				9972

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 8 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	71	36	7		

ALL EPHEMEROPTERA				785	
LEPIDOPTERA					
ALL EPHEMEROPTERA	0	1	1	14	
TRICHOPTERA					
LEPTOCERIDAE					
CERACLEA	1	1	0		

OECETIS	1	1	0		

TRIAENODES	1	0	0		

LIMNIPHILIDAE					
PYCNOPSYCHE	1	0	0		

POLYCENTROPODIDAE					
POLYCENTROPUS	3	2	0		

ALL TRICHOPTERA				76	
ODONATA					
COENAGRIONIDAE	1	0	0	7	
ACARINA	2	2	0	28	
GASTROPODA					
AMNICOLA	57	111	39		

ELIMIA LIVESCENS	3	7	0		

GYRAULUS	0	137	42		

PHYSA	9	86	23		

ALL GASTROPODA				3540	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	80	146	45	

SPHAERIUM	1	1	0	

ALL SPHAERIIDAE				1880
ALL PELECYPODA				1880

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT	8 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		440	708	1353	17224
HYDRA					
ALL CNIDARIA					17224
RHABDOCOELA		34	52	42	881
NEMERTINEA		0	2	0	14
NEMATODA		44	119	111	1887
OLIGOCHAETA					
NAIS		0	0	2	
SPIROSPERMA		16	146	61	
OTHER		704	1423	514	18737
ALL OLIGOCHAETA					
POLYCHAETA		1	16	9	179
MANAYUNKIA SPECIOSA					
ALL POLYCHAETA					179
CLADOCERA		12	0	18	207
ILYOCRYPTUS					
ALL CLADOCERA					207

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 8 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	1	8		
DIAPTOMUS	8	16	16		
HARPACTICOIDA	81	97	74		
LIMNOCALANUS	1	0	0		
MESOCYCLOPS	1	0	0		
PARACYCLOPS	4	0	1		
ALL COPEPODA				2128	
OSTRACODA	1	0	1	14	
AMPHIPODA					
GAMMARUS	17	26	37		
HYALELLA AZTECA	1	7	19		
PONTOPOREIA HOYI	6	0	1		
ALL AMPHIPODA				785	
ISOPODA					
ASELLUS	0	5	6	76	
ALL ISOPODA				76	
DIPTERA					
CERATOPOGONIDAE	0	0	3		
CHIRONOMIDAE	309	579	602	10261	
ALL DIPTERA				10282	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 8 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	4	23	9		

EPHEMERIDAE					
HEXAGENIA	7	6	38		

ALL EPHEMEROPTERA				599	
LEPIDOPTERA	0	3	3	41	
TRICHOPTERA					
LEPTOCERIDAE					
CERACLEA	0	1	0		

DECETIS	1	1	0		

POLYCENTROPODIDAE					
POLYCENTROPUS	0	1	2		

ALL TRICHOPTERA				41	
ODONATA					
COENAGRIONIDAE	0	0	1	7	
ACARINA	1	2	2	34	
GASTROPODA					
AMNICOLA	95	91	32		

ELIMIA LIVESCENS	0	1	1		

GYRAULUS	0	0	1		

PHYSA	1	3	1		

VALVATA SINCERA	0	2	3		

VALVATA TRICARINATA	2	0	0		

ALL GASTROPODA				1605	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 8 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	7	0	4		76

ALL PELECYPODA					76

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT	STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
FISH					
FISH EGGS		8	1	0	62

ALL FISH					62
CNIDARIA					
HYDRA		1948	1416	514	26706

ALL CNIDARIA					26706
RHABDOCOELA		84	81	104	1853
NEMATODA		76	24	9	751
OLIGOCHAETA					
NAIS		48	7	29	

SPIROSPERMA		384	85	652	

OTHER		1526	511	575	26286
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	3	35	262

ALL POLYCHAETA					262
CLADOCERA					
DAPHNIA		1	0	2	

ILYOCRYPTUS		0	1	1	

ALL CLADOCERA					34

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	8	3	0		
DIPTOMUS	1	4	9		
HARPACTICOIDA	49	23	8		
LIMNOCALANUS	0	4	1		
PARACYCLOPS	0	1	0		
ALL COPEPODA				764	
OSTRACODA	1	3	0		28
AMPHIPODA					
GAMMARUS	20	12	12		
HYALELLA AZTECA	8	1	7		
PONTOPOREIA HOYI	2	8	2		
ALL AMPHIPODA				496	
ISOPODA					
ASELLUS	2	2	3		48
ALL ISOPODA				48	
DIPTERA					
CERATOPOGONIDAE	7	8	3		
CHIRONOMIDAE	567	497	644		11762
EMBIIDAE	0	1	0		
TIPULIDAE	1	0	0		
ALL DIPTERA				11900	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	15	4	6		
EPHEMERIDAE					
HEXAGENIA	37	20	4		
EPHEMERELLIDAE					
EPHEMERELLA	1	4	5		
ALL EPHEMEROPTERA				661	
LEPIDOPTERA					
PYRALIDAE	0	0	1		
OTHER	3	0	0		
ALL LEPIDOPTERA				28	
TRICHOPTERA					
HYDROPSYCHIDAE	2	1	0		
HYDROPSYCHE					
LEPTOCERIDAE	0	0	1		
TRIAENODES					
POLYCENTROPODIDAE					
NEURECLIPSIS	0	0	2		
ALL TRICHOPTERA				41	
ACARINA	0	10	2		
GASTROPODA					
AMNICOLA	44	48	105		
GYRAULUS	0	1	0		
PHYSA	5	7	29		
VALVATA SINCERA	1	0	0		
ALL GASTROPODA				1653	

B-77

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/ 4/83	
TRANSECT 8 STATION 3 (CONT'D)			
TAXON	GRAB COUNTS		ESTIMATED
	1	2 3	NO./SQ. METER
PELECYPODA			
SPHAERIIDAE	31	71 92	
PISIDIUM			

SPHAERIUM	0	0 17	

ALL SPHAERIIDAE			1453
ALL PELECYPODA			1453

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT 9	STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	-----	-----	-----	-----	
CNIDARIA					
HYDRA	110	68	97		1894

ALL CNIDARIA					1894
TRICLADIDA	6	47	7		413
NEMERTINEA	0	0	1		7
NEMATODA	59	42	53		1061
HIRUDINEA					
ERPODELLIDAE	1	3	0		
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS	1	1	3		

ALL HIRUDINEA					62
OLIGOCHAETA					
NAIS	8	11	6		

SPIROSPERMA	87	9	58		

OTHER	429	210	277		
ALL OLIGOCHAETA					7541
POLYCHAETA					
MANAYUNKIA SPECIOSA	257	205	359		5654

ALL POLYCHAETA					5654
CLADOCERA					
ILYOCRYPTUS	5	19	1		172

ALL CLADOCERA					172

MACROZOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	1	
HARPACTICOIDA	8	17	16	
PARACYCLOPS	3	0	0	
ALL COPEPODA				310
OSTRACODA	5	1	8	96
AMPHIPODA				
GAMMARUS	40	53	33	
HYALELLA AZTECA	253	127	108	
ALL AMPHIPODA				4228
ISOPODA				
ASELLUS	27	69	14	
LIRCEUS	9	6	5	
ALL ISOPODA				895
DIPTERA				
CERATOPOGONIDAE	19	11	17	
CHIRONOMIDAE	320	468	282	7369
ALL DIPTERA				7692
EPHEMEROPTERA				
CAENIDAE	255	281	171	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	13	20	10	
ALL EPHEMEROPTERA				5165

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 9 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
LEPIDOPTERA					
PYRALIDAE	0	0	1		

OTHER	1	0	0		
ALL LEPIDOPTERA					14
TRICHOPTERA					
HYDROPSYCHIDAE	0	1	0		
HYDROPSYCHE					

LEPTOCERIDAE	1	0	1		
CERACLEA					

MYSTACIDES	3	11	9		

NECTOPSYCHE	8	0	0		

OECETIS	14	7	7		

SETODES	7	0	2		

POLYCENTROPODIDAE					
POLYCENTROPUS	4	2	2		

OTHER	3	0	0		
ALL TRICHOPTERA					565
ACARINA	2	0	1		21
TARDIGRADA	1	0	0		7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 9 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	26	63	60		
ELIMIA LIVESCENS	0	2	2		
GYRAULUS	10	38	7		
PHYSA	3	1	4		
ALL GASTROPODA					1488
PELECYPODA					
SPHAERIIDAE	35	28	31		
PISIDIUM	0	2	9		
SPHAERIUM					
ALL SPHAERIIDAE					723
ALL PELECYPODA					723

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT	9	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA					
HYDRA				15 0 287	2080

ALL CNIDARIA					2080
RHABDOCOELA				67 15 150	1598
TRICLADIDA				0 0 4	28
NEMERTINEA				1 1 0	14
NEMATODA				61 36 68	1136
OLIGOCHAETA					
NAIS				1 0 0	

SPIROSPERMA				182 112 150	
OTHER					
ALL OLIGOCHAETA				974 624 689	18814
POLYCHAETA					
MANAYUNKIA SPECIOSA				41 13 18	496

ALL POLYCHAETA					496
CLADOCERA					
DAPHNIA				0 0 1	

ILYOCRYPTUS				16 1 16	

ALL CLADOCERA					234

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPOIDIDAE	0	2	0	

CYCLOPS BICUSPIDATUS	1	0	0	

DIAPTOMUS	3	0	0	

HARPACTICOIDA	74	32	120	

LIMNOCALANUS	1	3	0	

PARACYCLOPS	2	0	0	

ALL COPEPODA				1639
OSTRACODA	4	1	1	41
AMPHIPODA				
GAMMARUS	42	12	82	

HYALELLA AZTECA	0	0	5	

PONTOPOREIA HOYI	3	0	2	

ALL AMPHIPODA				1005
ISOPODA				
ASELLUS	0	0	6	41

ALL ISOPODA				41
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	5	1	2	
CHIRONOMIDAE	681	312	406	9634
ALL DIPTERA				9690

B-84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	17	5	9	
EPHEMERIDAE				
HEXAGENIA	6	2	7	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	3	
ALL EPHEMEROPTERA				337
LEPIDOPTERA				
LEPIDOPTERA	0	0	1	7
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
DECETIS	2	6	0	
SETODES	2	0	0	
ALL TRICHOPTERA				76
ACARINA				
ACARINA	0	1	1	14
GASTROPODA				
AMNICOLA	75	40	92	
ELIMIA LIVESCENS	3	2	6	
GYRAULUS	0	2	1	
PHYSA	1	1	6	
PLEUROCERA ACUTA	0	1	0	
VALVATA TRICARINATA	12	5	10	
ALL GASTROPODA				1770

B-85

5/ 4/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	47	14	11	

SPHAERIUM	0	0	8	

ALL SPHAERIIDAE				551
ALL PELECYPODA				551

MACROZOOBENTHOS PONAR GRAB COUNT DATA							5/ 4/83
ST. CLAIR RIVER		TRANSECT 9		STATION 3			
TAXON		GRAB COUNTS				ESTIMATED	
		1	2	3		NO./SQ. METER	

FISH							
FISH EGGS		13	0	2		103	

ALL FISH						103	

CNIDARIA							
HYDRA		519	11	37		3905	

ALL CNIDARIA						3905	

RHABDOCOELA							
		27	6	25		399	

TRICLADIDA							
		1	0	0		7	

NEMATODA							
		48	47	16		764	

OLIGOCHAETA							
NAYS		13	0	2			

SPIROSPERMA							
		125	136	59			

OTHER							
		347	391	313			

ALL OLIGOCHAETA							
						9545	

POLYCHAETA							
MANAYUNKIA SPECIOSA		4	2	0		41	

ALL POLYCHAETA							
						41	

B-87

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 9 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
DAPHNIA	2	2	0		

DAPHNIA PULEX	0	0	3		

DAPHNIA SCHODLERI	0	0	2		

ILYOCRYPTUS	13	5	1		

ALL CLADOCERA					193
COPEPODA					
DIAPTOMUS	5	4	2		

HARPACTICOIDA	68	9	4		

LIMNOCALANUS	3	2	0		

ALL COPEPODA					668
OSTRACODA					
AMPHIPODA	5	1	0		41
GAMMARUS					

HYALELLA AZTECA	17	0	14		

PONTOPOREIA HOYI	18	1	3		

ALL AMPHIPODA	5	5	2		448
TERRESTRIAL INSECT					
DIPTERA	0	1	0		7

CERATOPOGONIDAE	0	5	3		
CHIRONOMIDAE	738	626	261		11191
ALL DIPTERA					11246

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 9 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	4	4	0		
EPHEMERIDAE					
HEXAGENIA	11	28	25		
EPHEMERELLIDAE					
EPHEMERELLA	1	0	0		
ALL EPHEMEROPTERA					503
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	0	0	2		
ALL COLEOPTERA					14
LEPIDOPTERA					
	0	0	1		7
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEIMATOPSYCHE	1	0	2		
HYDROPSYCHE	1	0	0		
LEPTOCERIDAE					
CERACLEA	0	0	1		
MYSTACIDES	3	0	0		
NECTOPSYCHE	0	0	1		
OECETIS	2	0	0		
ALL TRICHOPTERA					76
ACARINA	0	4	1		34

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
GASTROPODA				
AMNICOLA	69	12	28	
ELIMIA LIVESCENS	1	0	3	
GYRAULUS	3	0	4	
PHYSA	11	0	0	
VALVATA TRICARINATA	4	0	0	
ALL GASTROPODA				930
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	24	29	475
ALL PELECYPODA				475

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT 10 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CHIDARIA		12	0	7	131
HYDRA					

ALL CHIDARIA					131
RHABDOCOELA		1	2	3	41
NEMATODA		2	7	12	145
OLIGOCHAETA					
NAIS		0	0	1	

SPIROSPERMA		0	1	0	

OTHER		12	26	50	
ALL OLIGOCHAETA					620
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	1	0	7

ALL POLYCHAETA					7
CLADOCERA					
DAPHNIA GALEATA MENDOTAE		1	0	0	7

ALL CLADOCERA					7
COPEPODA					
HARPACTICOIDA		0	13	2	

LIMNOCALANUS		3	0	1	

ALL COPEPODA					131
AMPHIPODA					
GAMMARUS		2	1	5	55

ALL AMPHIPODA					55

MACROZOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 10 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CERATOPOGONIDAE	0	3	2	
CHIRONOMIDAE	4	20	72	661
ALL DIPTERA				696
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	1	2	4	
ELIMIA LIVESCENS	0	0	1	
ALL GASTROPODA				55
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	9	17	186
ALL PELECYPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 4/83
ST. CLAIR RIVER	TRANSECT 10 STATION 2			
TAXON		GRAB COUNTS		
		1	2	3
		ESTIMATED		
		NO./50. METER		
CNIDARIA				
HYDRA		49	8	145
-----				1391
ALL CNIDARIA				1391
RHABDOCOELA		22	22	80
TRICLADIDA		0	0	6
NEMERTINEA		1	0	1
NEMATODA		39	58	48
				1005
OLIGOCHAETA				
NAIS		0	0	4

SPIROSPERMA		31	33	22

OTHER		206	195	306
ALL OLIGOCHAETA				5482
POLYCHAETA				
MANAYUNKIA SPECIOSA		61	19	91
-----				1178
ALL POLYCHAETA				1178
CLADOCERA				
ILYOCRYPTUS		1	6	1
-----				55
ALL CLADOCERA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
DIAPYCNUS	1	0	1	

HARPACTICOIDA	0	21	20	

LIMNOCALANUS	2	0	1	

ALL COPEPODA				317
OSTRACODA				
	1	0	0	7
AMPHIPODA				
GAMMARUS	46	10	76	

PONTOPOREIA HOYI	0	0	3	

ALL AMPHIPODA				830
ISOPODA				
ASELLUS	5	0	10	103

ALL ISOPODA				103
DIPTERA				
CERATOPOGONIDAE	2	2	0	
CHIRONOMIDAE	203	310	444	6591
ALL DIPTERA				6618
EPHEMEROPTERA				
CAENIDAE				
CHENIS	7	2	14	

EPHEMERIDAE				
HEXAGENIA	3	13	1	

EPHEMERELLIDAE				
EPHEMERELLA	0	0	2	

ALL EPHEMEROPTERA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 4/83
TRANSECT 10 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
LEPTOCERIDAE	1	1	0	
MYSTACIDAE				

DECEITIS	1	0	2	

ALL TRICHOPTERA				34
ACARINA	1	1	0	14
GASTROPODA				
AMNICOLA	197	12	72	

ELIMIA LIVESCENS	5	1	7	

GYRAULUS	12	1	4	

PHYSA	4	0	9	

VALVATA TRICARINATA	3	0	8	

ALL GASTROPODA				1894
PELECYPODA				
SPHAERIIDAE	43	24	24	627
PISIDIUM				

UNIONIDAE	1	0	0	634
ALL PELECYPODA				

B-95

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
ST. CLAIR RIVER	TRANSECT 10 STATION 3	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		1707	7	81	12362
HYDRA					

ALL CNIDARIA					12362
RHABDOCELA		79	27	103	1439
TRICLADIDA		6	0	1	48
NEMERTINEA		9	0	0	62
NEMATODA		118	51	88	1770
OLIGOCHAETA					
NAIS		76	0	0	

SPIROSPERMA		216	40	23	

OTHER		489	343	244	
ALL OLIGOCHAETA					9855
CLADOCERA					
BOSMINA		0	1	0	

ILYOCRYPTUS		32	18	4	

ALL CLADOCERA					379

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 10 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	1	0		
DIAPYCNUS	0	4	0		
HARPACTICOIDA	112	42	13		
MACROCYCLOPS	0	1	0		
ALL COPEPODA				1191	
OSTRACODA	0	1	0		7
AMPHIPODA					
GAMMARUS	59	6	30		
HYALELLA AZTECA	4	0	1		
PONTOPOREIA HOYI	0	1	0		
ALL AMPHIPODA				696	
ISOPODA					
ASELLUS	1	0	4		34
ALL ISOPODA				34	
TERRESTRIAL INSECT	2	0	0		14
DIPTERA					
CERATOPOGONIDAE	5	1	10		
CHIRONOMIDAE	598	262	247		7624
PSYCHODIDAE	1	0	0		7741
ALL DIPTERA					

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	15	4	2	

EPHEMERIDAE				
HEXAGENIA	18	22	6	

EPHEMERELLIDAE				
EPHEMERELLA	4	0	0	

ALL EPHEMEROPTERA				489
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	3	2	

POLYCENTROPODIDAE				
NEURECLIPSIS	5	0	0	

ALL TRICHOPTERA				76
ODONATA				
COENAGRIONIDAE	1	0	0	7
ACARINA	5	0	2	48
TARDIGRADA	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 4/83
TRANSECT 10 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	84	25	36	
ELIMIA LIVESCENS	0	0	3	
GYRAULUS	24	1	2	
PHYSA	4	1	1	
ALL GASTROPODA				1246
PELECYPODA				
SPHAERIIDAE	10	11	15	
PISIDIUM	22	0	1	
SPHAERIUM				
ALL SPHAERIIDAE				406
ALL PELECYPODA				406

B-99

MACROZOEBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
LAKE ST. CLAIR	TRANSECT 11 STATION 1				
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3		NO./SQ. METER
RHABDOCOELA	0	1	0	7	
NEMATODA	73	68	13	1061	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	1	0	0		
HELOBDELLA STAGNALIS	0	3	0		
PLACOBDELLA MONTIFERA	0	0	1		
ALL HIRUDINEA				34	
OLIGOCHAETA					
SPIROSPERMA	1	1	0		
OTHER	39	47	36	854	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	28	16	5	337	
ALL POLYCHAETA				337	
CLADOCERA					
ILYOCRYPTUS	2	0	1	21	
ALL CLADOCERA				21	
COPEPODA					
HARPACTICOIDA	6	2	0	55	
ALL COPEPODA				55	
OSTRACODA	1	3	0	28	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 5/83

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	0	1	8	62

ALL AMPHIPODA				62
TERRESTRIAL INSECT				
DIPTERA	0	1	0	7
CHIRONOMIDAE	58	80	26	1129
EPHEMEROPTERA				
EPHEMERIDAE	45	56	44	
HEXAGENIA				

EPHEMERELLIDAE				
EPHEMERELLA	0	0	1	

ALL EPHEMEROPTERA				1005
TRICHOPTERA				
HYDROPSYCHIDAE	0	0	1	
CHEUMATOPSYCHE				

LEPTOCERIDAE	1	5	0	
OECETIS				

ALL TRICHOPTERA				48
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	1	0	0	7

ALL GASTROPODA				7

B-101

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 11 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	20	16	4		

SPHAERIUM	0	1	0		

ALL SPHAERIIDAE				282	
UNIONIDAE					
LAMPUSILIS RADIATA SILIQUOIDEA	0	0	1		

OTHER	0	1	0		
ALL PELECYPODA				296	

5/ 5/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

LAKE ST. CLAIR	TRANSECT 11	STATION 2	GRAB COUNTS			ESTIMATED
TAXON			1	2	3	NO./SQ. METER

RHABDOCOELA			1	3	2	41

NEMATODA			94	98	233	2927

HIRUDINEA						
GLOSSIPHONIIDAE						
PLACOBDELLA MONTIFERA			0	1	0	

ALL HIRUDINEA						7

OLIGOCHAETA						
NAIS			0	0	1	

SPIROSPERMA			0	1	0	

OTHER			59	45	118	
ALL OLIGOCHAETA						1543

POLYCHAETA						
MANAYUNKIA SPECIOSA			9	4	19	220

ALL POLYCHAETA						220

CLADOCERA						
DAPHNIA			0	0	1	

ILYOCRYPTUS			1	0	3	

ALL CLADOCERA						34

COPEPODA						
DIAPTOMUS			1	0	3	

HARPACTICOIDA			0	5	24	

LIMNOCALANUS			0	2	2	

MESOCYCLOPS			0	0	1	

ALL COPEPODA						262

8-103

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 5/83
TRANSECT 11 STATION 2 (CONT'D)						
TAXON	GRAB COUNTS					ESTIMATED NO./SQ. METER
	1	2	3	4	6	
OSTRACODA	0	4	6	69		69
AMPHIPODA						
GAMMARUS	1	4	5	69		69

ALL AMPHIPODA				69		69
DIPTERA						
CHIRONOMIDAE	34	45	68	1012		1012
EPHEMEROPTERA						
EPHEMERIDAE	47	59	69			
HEXAGENIA						

ALL EPHEMEROPTERA				1205		1205
TRICHOPTERA						
LEPTOCERIDAE	0	5	0			
OECETIS						

ALL TRICHOPTERA				34		34
ACARINA	1	3	1	34		34
GASTROPODA						
AMNICOLA	1	0	0	7		7

ALL GASTROPODA				7		7
PELECYPODA						
SPHAERIIDAE	17	16	49			
PISIDIUM						

SPHAERIUM	2	0	1			

ALL SPHAERIIDAE				585		585
ALL PELECYPODA				585		585

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
LAKE ST. CLAIR	TRANSECT 11	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA	0	4	0	+	
SPONGILLA				0	
ALL PORIFERA				0	
RHABDOCOELA	2	0	0	14	
NEMATODA	39	103	96	1639	
HIRUDINEA				34	
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	0	3	2		
ALL HIRUDINEA				34	
OLIGOCHAETA					
SPIROSPERMA	0	2	0		
OTHER	330	345	461	7837	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	44	11	15	482	
ALL POLYCHAETA				482	
CLADOCERA					
DAPHNIA	2	0	0		
ILYOCRYPTUS	37	6	32		
ALL CLADOCERA				530	

B-105

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 5/83
TRANSECT 11 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPOIDIDAE	0	0	1		

DIAPYCNUS	0	2	0		

HARPACTICOIDA	0	0	2		

LIMNOCALANUS	2	2	4		

MACROCYCLOPS	4	2	0		

ALL COPEPODA				131	
OSTRACODA					
AMPHIPODA	1	0	2	21	
GAMMARUS	1	0	3	28	

ALL AMPHIPODA				28	
TERRESTRIAL INSECT					
DIPTERA	0	0	1	7	
CHIRONOMIDAE	46	27	59	809	
EPHEMEROPTERA					
CAENIDAE	0	0	1		
CAENIS					

EPHEMERIDAE					
HEXAGENIA	50	38	59		

ALL EPHEMEROPTERA				1019	
ACARINA	2	0	1	21	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 11 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	33	22	43	

SPHAERIUM	2	7	15	

ALL SPHAERIIDAE				840
ALL PELECYPODA				840

B-107

MACROZOEBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
LAKE ST. CLAIR		TRANSECT 12 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	-----			-----	
CNIDARIA					
HYDRA	0	0	1		7

ALL CNIDARIA					7
RHABDOCELA	1	1	1		21
NEMATODA	25	29	17		489
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS	0	0	1		7

ALL HIRUDINEA					
OLIGOCHAETA					
SPIROSPERMA	4	0	0		

OTHER	27	52	34		806
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	82	146	74		2080

ALL POLYCHAETA					2080
CLADOCERA					
BOSMINA	1	0	0		7

AL. CLADOCERA					7
COPEPODA					
CYCLOPS BICUSPIDATUS	0	1	0		

HARPACTICOIDA	4	7	9		

LIMNOCALANUS	1	1	1		

ALL COPEPODA					165

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OSTRACODA	6	8	1	103
AMPHIPODA				
GAMMARUS	16	5	25	317
ALL AMPHIPODA				317
DIPTERA				
CHIRONOMIDAE	50	60	42	1047
EPHEMEROPTERA				
EPHEMERIDAE	25	20	16	
HEXAGENIA				
ALL EPHEMEROPTERA				420
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	8	2	8	
ELIMIA LIVESCENS	0	0	1	
GYRAULUS	0	0	2	
PLEUROCERA ACUTA	0	7	0	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				200
PELECYPODA				
SPHAERIIDAE	15	11	13	
PISIDIUM				
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				275
UNIONIDAE				
LEPTODEA FRAGILIS	1	0	0	
ALL PELECYPODA				282

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
LAKE ST. CLAIR		TRANSECT 12 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./50. METER	
CNIDARIA					
HYDRA	5	0	0		34

ALL CNIDARIA					34
NEMATODA					
	35	51	27		778
OLIGOCHAETA					
	22	27	23		496
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	2	19		145

ALL POLYCHAETA					145
COPEPODA					
DIAPTOMUS	0	1	0		

HARPACTICOIDA	0	6	3		

LIMNOCALANUS	1	0	0		

MACROCYCLOPS	0	0	1		

ALL COPEPODA					83
OSTRACODA					
	3	4	5		83
AMPHIPODA					
GAMMARUS	20	6	12		262

ALL AMPHIPODA					262
DIPTERA					
CHIRONOMIDAE	55	51	27		916

B-110

MACROZOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 12 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA				

ALL EPHEMEROPTERA	23	30	26	544
TRICHOPTERA				
LEPTOCERIDAE				
DE CETIS	5	0	5	

ALL TRICHOPTERA				68
ACARINA	2	2	0	28
GASTROPODA				
AMNICOLA	2	3	1	

PHYSA	1	0	0	

PLEUROCERA ACUTA	1	0	1	

ALL GASTROPODA				62
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	13	19	16	

SPHAERIUM	1	2	1	

ALL SPHAERIIDAE				358
ALL PELECYPODA				358

B-111

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 5/83
LAKE ST. CLAIR	TRANSECT 12 STATION 3	GRAB COUNTS			ESTIMATED	
		1	2	3	NO./SQ. METER	
TAXON		1	2	3	-----	
RHABDOCOELA		2	1	2	34	
NEMATODA		100	17	76	1329	
HIRUDINEA						
GLOSSIPHONIIDAE						
HELOBDELLA ELONGATA		1	0	0		
HELOBDELLA STAGNALIS		2	0	0		
ALL HIRUDINEA					21	
OLIGOCHAETA		372	93	460	6370	
POLYCHAETA						
MANAYUNKIA SPECIOSA		8	13	8	207	
ALL POLYCHAETA					207	
CLADOCERA						
DAPHNIA		1	2	0		
ILYOCRYPTUS		47	1	21		
ALL CLADOCERA					496	

B-112

5/ 5/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPOIDIDAE	0	0	1	

CYCLOPS BICUSPIDATUS	2	0	0	

CYCLOPS VERNALIS	1	0	0	

DIAPTOMUS	3	1	3	

HARPACTICOIDA	4	0	0	

LIMNOCALANUS	1	6	0	

MACROCYCLOPS	0	0	1	

MESOCYCLOPS	0	1	0	

ALL COPEPODA				165
OSTRACODA				
3	0	10		90
AMPHIPODA				
GAMMARUS	5	8	4	117

ALL AMPHIPODA				117
TERRESTRIAL INSECT				
1	1	0		14
DIPTERA				
CHIRONOMIDAE	64	32	36	923
EPHEMEROPTERA				
EPHEMERIDAE				
HEMIGENIA	26	36	23	

ALL EPHEMEROPTERA				585

B-113

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 5/83
TRANSECT 12 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
ACARINA	0	2	1	21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	51	30	86	1150

ALL PELECYPODA				1150

5/ 4/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

LAKE ST. CLAIR	TRANSECT 13 STATION 1				ESTIMATED
TAXON		GRAB COUNTS			NO./SQ. METER
		1	2	3	
CNIDARIA		0	1	0	7
HYDRA					

ALL CNIDARIA					7
RHABDOCOELA		2	3	9	96
NEMATODA		10	27	26	434
OLIGOCHAETA		1	1	2	
SPIROSPERMA					

OTHER		9	9	18	275
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		31	104	30	1136

ALL POLYCHAETA					1136
CLADOCERA					
CHYDORUS		0	1	0	

DAPHNIA		0	1	0	

ALL CLADOCERA					14
COPEPODA					
HARPACTICOIDA		0	7	1	

LIMNOCALANUS		0	0	1	

ALL COPEPODA					62
OSTRACODA		0	2	1	21

B-115

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
TRANSECT 13 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	14	17	8		269

ALL AMPHIPODA					269
DIPTERA					
CHIRONOMIDAE	14	35	20		475
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	15	29	25		

ALL EPHEMEROPTERA					475
TRICHOPTERA					
LEPTOCERIDAE	1	2	3		
OECETIS					

ALL TRICHOPTERA					41
ACARINA	1	0	1		14
GASTROPODA					
AMNICOLA	0	2	0		

ELIMIA LIVESCENS	1	2	0		

GYRAULUS	0	4	0		

ALL GASTROPODA					62
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	10	28	3		

SPHAERIUM	1	0	0		

ALL SPHAERIIDAE					289
UNIONIDAE					
LAMPISILIS RADIATA SILIQUOIDEA	1	0	0		

ALL PELECYPODA					296

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
LAKE ST. CLAIR	TRANSECT 13 STATION 2				
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA	0	0	+	+	
SPONGILLA					

ALL PORIFERA				0	
CNIDARIA					
HYDRA	0	136	0	937	

ALL CNIDARIA				937	
RHABDOCELA	0	1	0	7	
NEMERTINEA	0	3	0	21	
NEMATODA	43	411	36	3374	
HIRUDINEA					
GLOSSIPHONIIDAE	1	1	0		
HELOBDELLA STAGNALIS					

ALL HIRUDINEA				14	
OLIGOCHAETA					
SPIROSPERMA	0	3	0		

OTHER	59	97	31		
ALL OLIGOCHAETA				1308	
POLYCHAETA					
MANAYUNKIA SPECIOSA	11	60	4	516	

ALL POLYCHAETA				516	

B-117

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPOIDIDAE	1	3	0	

DIAPTOMUS	0	2	0	

HARPACTICOIDA	26	4	1	

LIMNOCALANUS	0	2	1	

MACROCYCLOPS	1	0	0	

ALL COPEPODA				282
OSTRACODA				
AMPHIPODA	4	4	0	55
GAMMARUS				

ALL AMPHIPODA	3	62	20	585

585				
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	48	18	20	592
ALL DIPTERA				599
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	24	18	16	

BAETISCIDAE				
BAETISCA	0	1	0	

ALL EPHEMEROPTERA				406

B-118

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPOSYCHE				
LEPTOCERIDAE				
MYSTACIDES				
OECEETIS				
ALL TRICHOPTERA				145
ACARINA				
	1	1	0	14
GASTROPODA				
AMNICOLA				
	5	0	0	
BITHYNIA				
	0	0	1	
VALVATA TRICARINATA				
	0	0	1	
ALL GASTROPODA				48
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				
	28	14	12	
SPHAERIUM				
	1	0	0	
ALL SPHAERIIDAE				379
UNIONIDAE				
	1	0	0	
ALL PELECYPODA				386

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/83
LAKE ST. CLAIR		TRANSECT 13 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	0	3	0	21	
NEMERTINEA	0	0	1	7	
NEMATODA	36	47	68	1040	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS	0	0	1		

ALL HIRUDINEA				7	
OLIGOCHAETA	255	6	217	3292	
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	38	0	262	

ALL POLYCHAETA				262	
CLADOCERA					
ILYOCRYPTUS	5	2	3	69	

ALL CLADOCERA				69	

5/ 4/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPOIDAE	0	3	0	

CYCLOPS BICUSPIDATUS	0	0	1	

DIAPTOMUS	1	2	0	

HARPACTICOIDA	3	3	4	

LIMNOCALANUS	1	0	0	

MACROCYCLOPS	0	0	1	

MESOCYCLOPS	1	0	0	

ALL COPEPODA				138
OSTRACODA	1	2	3	41
AMPHIPODA				
GAMMARUS	1	1	7	62

ALL AMPHIPODA				62
DIPTERA				
CHIRONOMIDAE	74	19	95	1295
EPHEMEROPTERA				
EPHEMERIDAE	32	28	51	
HEXAGENIA				

ALL EPHEMEROPTERA				764
TRICHOPTERA				
LEPTOCERIDAE	1	4	2	
DECETIS				

ALL TRICHOPTERA				48
ACARINA	2	1	2	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
GASTROPODA				
PLEUROCERA ACUTA				
ALL GASTROPODA	0	0	1	7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	26	0	10	
SPHAERIUM	0	6	1	
ALL SPHAERIIDAE				296
ALL PELECYPODA				296

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/10/83
DETROIT RIVER		TRANSECT 14 STATION 1				
TAXON	GRAB COUNTS				ESTIMATED	
	1	2	3	8	NO./SQ. METER	
CNIDARIA						
HYDRA		2	14	8	165	

ALL CNIDARIA					165	
RHABDOCELA		1	1	0	14	
NEMERTINEA		6	4	1	76	
NEMATODA		0	0	24	165	
OLIGOCHAETA						
BRANCHIURA		0	0	1		

NAIS		0	0	2		

SPIROSPERMA		0	0	7		

OTHER		20	151	334	3547	
ALL OLIGOCHAETA						
POLYCHAETA						
MANAYUNKIA SPECIOSA		55	36	99	1308	

ALL POLYCHAETA					1308	
CLADOCERA						
DAPHNIA		4	4	3	76	

ALL CLADOCERA					76	

B-123

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 14 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	4	

DIATOMUS	10	5	0	

HARPACTICOIDA	0	10	85	

LIMNOCALANUS	1	0	7	

ALL COPEPODA				854
OSTRACODA				
	1	4	2	48
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	2	8	49	406
ALL DIPTERA				413
EPHEMEROPTERA				
EPHEMERIDAE	0	0	1	
HEXAGENIA				

BAETISCIDAE	0	0	2	
BAETISCA				

ALL EPHEMEROPTERA				21
TRICHOPTERA				
LEPTOCERIDAE	0	1	0	
CERACLEA				

ALL TRICHOPTERA				7
ACARINA	0	1	3	28

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
TRANSECT 14 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	4	1	22		

ELIMIA LIVESCENS	10	10	0		

ALL GASTROPODA				324	
PELECYPODA					
SPHAERIIDAE	4	14	12		
PISIDIUM					

SPHAERIUM	1	4	7		

ALL SPHAERIIDAE				289	
ALL PELECYPODA				289	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 14 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	-----			-----	
CNIDARIA					
HYDRA	4	25	17		317

ALL CNIDARIA					317
RHABDOCELA	0	1	0		7
NEMERTINEA	4	6	1		76
NEMATODA	10	7	5		152
OLIGOCHAETA					
BRANCHIURA	0	1	0		

NAIS	1	2	0		

SPIROSPERMA	3	19	5		

OTHER	133	319	189		4628
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	148	506	296		6542

ALL POLYCHAETA					6542
CLADOCERA					
DAPHNIA	2	2	2		41

ALL CLADOCERA					41

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/10/83

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	1	
DIAPTOMUS	2	4	0	
HARPACTICOIDA	0	29	8	
ALL COPEPODA				310
OSTRACODA	0	25	8	227
DIPTERA				
CHIRONOMIDAE	44	75	26	989
EPHEMEROPTERA				
BAETISCIDAE	2	0	0	
BAETISCA				14
ALL EPHEMEROPTERA				14
ACARINA	0	0	2	
GASTROPODA				
AMNICOLA	1	2	2	
BITHYNIA	0	1	0	
ELIMIA LIVESCENS	0	6	3	
PLEUROCERA ACUTA	0	0	1	
ALL GASTROPODA				110

B-127

MACROZOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 14 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE	16	36	16	
PISIDIUM				

SPHAERIUM	2	22	12	

ALL SPHAERIIDAE				716
UNIONIDAE				
LAMPISILIS RADIATA SILIQUOIDEA	0	0	1	

ALL PELECYPODA				723

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 14 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	16	0	4	138	
HYDRA					
ALL CNIDARIA				138	
RHABDOCELA	1	1	0	14	
NEMERTINEA	38	7	15	413	
NEMATODA	20	20	27	461	
HIRUDINEA					
GLOSSIPHONIIDAE	0	0	1	7	
OLIGOCHAETA					
BRANCHIURA SOWERBYI	1	0	0		
SPIROSPERMA	185	68	180		
OTHER	285	59	144		
ALL OLIGOCHAETA				6349	
POLYCHAETA					
MANAYUNKIA SPECIOSA	1293	197	417	13133	
ALL POLYCHAETA				13133	
CLADOCERA					
ALONA	0	1	0		
DAPHNIA	0	4	1		
ILYOCRYPTUS	0	4	0		
ALL CLADOCERA				69	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 14 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./50. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	1	
DIAPTOMUS	3	4	5	
HARPACTICOIDA	1	0	1	
LINNOCALANUS	2	6	3	
PARACYCLOPS	0	0	2	
ALL COPEPODA				193
OSTRACODA	83	8	187	1914
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	93	34	107	1611
EPHEMEROPTERA				
EPHEMERIDAE	1	1	4	
HEXAGENIA				
BAETISCIDAE	1	0	0	
BAETISCA				
ALL EPHEMEROPTERA				48
TRICHOPTERA				
LEPTOCERIDAE	2	0	0	
GERACLEA				
ALL TRICHOPTERA				14
ACARINA	4	3	4	76

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 14 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	0	1	0	

ELIMIA LIVESCENS	0	0	1	

ALL GASTROPODA				14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	54	11	20	

SPHAERIUM	30	2	3	

ALL SPHAERIIDAE				826
ALL PELECYPODA				826

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/10/83	
DETROIT RIVER	TRANSECT 15 STATION 1		
TAXON		GRAB COUNTS	ESTIMATED
		1 2 3	NO./50. METER
CNIDARIA		33 8 39	551
HYDRA			
ALL CNIDARIA			551
RHABDOCOELA		0 0 2	14
NEMATODA		8 16 5	200
OLIGOCHAETA			
SPIROSPERMA		0 0 1	
OTHER			
ALL OLIGOCHAETA		11 66 23	696
POLYCHAETA			
MANAYUNKIA SPECIOSA		0 0 3	21
ALL POLYCHAETA			21
CLADOCERA			
DAPHNIA		5 6 0	76
ALL CLADOCERA			76
COPEPODA			
CYCLOPS BICUSPIDATUS		5 10 0	
DIAPTOMUS		7 11 0	
LIMNOCALANUS		3 0 0	
ALL COPEPODA			248
OSTRACODA		2 0 0	14

5/10/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	0	3	6	62
GASTROPODA				
AMNICOLA	4	9	0	
ELIMIA LIVESCENS	2	3	9	
ALL GASTROPODA				186
PELECYPODA				
SPHAERIIDAE	6	17	21	
PISIDIUM	0	0	1	
SPHAERIUM				
ALL SPHAERIIDAE				310
ALL PELECYPODA				310

B-133

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 15 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	159	266	383	5564	
-----				5564	
ALL CNIDARIA					
TRICLADIDA	0	1	2	21	
NEMERTINEA	5	9	8	152	
NEMATODA	167	192	209	3912	
OLIGOCHAETA					
SPIROSPERMA	15	17	12		

OTHER	140	115	84	2638	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	42	34	33	751	
-----				751	
ALL POLYCHAETA					
CLADOCERA					
BOSMINA	0	0	1	7	
-----				7	
ALL CLADOCERA					
COPEPODA					
CYCLOPS BICUSPIDATUS	2	0	0		

DIAPYCNUS	2	4	3		

HARPACTICOIDA	1	1	0		

LIMNOCALANUS	1	2	1		

ALL COPEPODA					117

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
TRANSECT 15 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED NO./SQ. METER
	1	2	3	4	
OSTRACODA	9	7	4		138
DIPTERA					
CHIRONOMIDAE	2	3	2		48
EPHEMEROPTERA					
CAENIDAE					
CAENIS	1	1	0		
EPHEMERIDAE					
HEXAGENIA	1	2	0		
BAETISCIDAE					
BAETISCA	1	2	1		
ALL EPHEMEROPTERA					62
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	8	7	10		
ALL TRICHOPTERA					172
GASTROPODA					
ELIMIA LIVESCENS	0	1	1		14
ALL GASTROPODA					14
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	4	10	15		
SPHAERIUM	2	1	0		
ALL SPHAERIIDAE					220
ALL PELECYPODA					220

B-135

MACROZOEBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 15 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		1087	561	39	11618

ALL CNIDARIA					11618
RHABDOCOELA		0	1	0	7
NEMERTINEA		8	4	9	145
NEMATODA		56	19	21	661
HIRUDINEA					
GLOSSIPHONIIDAE		1	0	0	7
OLIGOCHAETA					
SPIROSPERMA		0	9	38	

OTHER		30	89	177	2362
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		16	46	168	1584

ALL POLYCHAETA					1584
CLADOCERA					
DAPHNIA		1	1	0	14

ALL CLADOCERA					14

5/10/83

MACROZOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 15 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	2	3	2	

DIAPTOMUS	3	7	2	

LIWOCALANUS	1	1	2	

ALL COPEPODA				158
OSTRACODA	9	14	22	310
DIPTERA				
CHIRONOMIDAE	2	1	9	83
EPHEMEROPTERA				
EPHEMEROPTERA	0	0	1	
BAETISCIDAE				
BAETISCA	3	6	1	

ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	21	4	0	

HYDROPSYCHE	2	1	0	

ALL TRICHOPTERA				193
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	3	0	0	21

ALL GASTROPODA				21

B-137

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
TRANSECT 15 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	10	8	24		

SPHAERIUM	3	0	3		

ALL SPHAERIIDAE					337
ALL PELECYPODA					337

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER	TRANSECT 16 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		269	211	192	4628

ALL CNIDARIA					4628
RHABDOCELA		6	8	32	317
NEMATODA		86	72	138	2038
MIRUDINEA					
ERPODELLIDAE		3	2	9	
GLOSSIPHONIIDAE		0	0	1	
GLOSSIPHONIA HETEROCLITA					

HELOBDELLA ELONGATA		1	2	0	

HELOBDELLA STAGNALIS		1	1	0	

ALL MIRUDINEA					138
OLIGOCHAETA					
NAIS		0	0	1	

SPIROSPERMA		0	0	1	

OTHER		439	220	416	
ALL OLIGOCHAETA					7417
CLADOCERA					
ALONA		1	0	0	

DAPHNIA		3	0	1	

ILYOCRYPTUS		0	1	0	

ALL CLADOCERA					41

5/10/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	0	
CYCLOPS VERNALIS	2	0	0	
DIAPTOMUS	4	0	0	
HARPACTICOIDA	41	41	16	
MACROCYCLOPS	3	1	8	
ALL COPEPODA				813
OSTRACODA	102	65	92	1784
AMPHIPODA				
GAMMARUS	1	0	0	
HYALELLA AZTECA	12	12	14	
ALL AMPHIPODA				268
ISOPODA				
ASELLUS	1	3	0	28
ALL ISOPODA				28
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	14	18	17	
CHIRONOMIDAE	180	176	160	3554
ALL DIPTERA				3891

B-140

MACROZOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 16 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	5	7	1	
EPHEMERIDAE				
HEXAGENIA	5	3	6	

ALL EPHEMEROPTERA				186
LEPIDOPTERA	0	1	1	14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	3	2	

POLYCENTROPODIDAE				
PHYLOCENTROPUS	1	0	0	

ALL TRICHOPTERA				55
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	13	3	9	

CAMPELOMA	0	0	1	

GYRAULUS	2	1	2	

PHYSA	0	0	1	

PLEUROCERA ACUTA	0	1	1	

ALL GASTROPODA				234

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 16 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA					
ALL CNIDARIA		545	729	1039	15929
RHABDOCOELA					
NEMERTINEA		4	11	30	310
NEMATODA		3	1	8	83
OLIGOCHAETA					
NAIS		287	356	311	6570
SPIROSPERMA					
STYLARIA		8	1	3	
OTHER		13	19	19	
ALL OLIGOCHAETA		0	0	1	
POLYCHAETA		308	374	308	7265
MANAYUNKIA SPECIOSA					
ALL POLYCHAETA		0	0	6	41
CLADOCERA					
BOSMINA					
DIAPHANASOMA		0	2	2	
ILYOCRYPTUS		0	1	0	
ALL CLADOCERA		0	0	2	48

B-142

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 16 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	7	

DIAPTOMUS	0	7	2	

HARPACTICOIDA	24	25	29	

LIMNOCALANUS	0	4	3	

MACROCYCLOPS	2	3	0	

MESOCYCLOPS	0	0	1	

PARACYCLOPS	0	1	1	

ALL COPEPODA				806
OSTRACODA	59	67	98	1543
AMPHIPODA				
GAMMARUS	8	0	6	

HYALELLA AZTECA	1	2	6	

ALL AMPHIPODA				158
TERRESTRIAL INSECT	0	1	2	21
DIPTERA				
CERATOPOGONIDAE	0	14	16	
CHIRONOMIDAE	154	285	202	4414
ALL DIPTERA				4621

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/10/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	12	13	
EPHEMERIDAE				
HEXAGENIA	27	15	15	
ALL EPHEMEROPTERA				634
LEPIDOPTERA	1	1	2	28
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	2	3	8	
HYDROPSYCHE	0	0	5	
LEPTOCERIDAE				
OECETIS	0	1	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	1	
PHYLOCENTROPUS	1	0	1	
ALL TRICHOPTERA				165
ACARINA	5	4	1	69
T-RDIGRADA	0	0	1	7
GASTROPODA				
AMNICOLA	10	3	4	
ELIMIA LIVESCENS	0	0	1	
ALL GASTROPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 16 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	27	55	31	778

ALL PELECYPODA				778

MACROZOEBENTHOS PONAR GRAB COUNT DATA				5/10/83
DETROIT RIVER		TRANSECT 16 STATION 3		
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
-----	-----	-----	-----	-----
CNIDARIA				
HYDRA	730	123	59	6281

ALL CNIDARIA				6281
RHABDOCOELA	3	3	2	55

NEMERTINEA	2	6	0	55

NEMATODA	33	76	23	909

OLIGOCHAETA				
SPIROSPERMA	17	17	12	

OTHER				
ALL OLIGOCHAETA	189	179	436	5854

POLYCHAETA				
MANAYUNKIA SPECIOSA	4	29	0	227

ALL POLYCHAETA				227

CLADOCERA				
BOSMINA	1	0	0	

DAPHNIA	1	0	2	

ALL CLADOCERA				28

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
TRANSECT 16 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	1	2		

DIAPYCNUS	1	2	2		

HARPACTICOIDA	0	3	4		

LIMNOCALANUS	1	0	2		

ALL COPEPODA					124
OSTRACODA	4	8	1		90
AMPHIPODA					
GAMMARUS	14	2	2		

MYALELLA AZTECA	1	0	0		

ALL AMPHIPODA					131
DIPTERA					
CECATOPOGONIDAE	1	6	3		
CHIRONOMIDAE	11	45	42		675
ALL DIPTERA					744
EPHEMEROPTERA					
CAENIDAE	0	3	0		
CAENIS					

EPHEMERIDAE					
HEXAGENIA	1	16	0		

BAETISCIDAE					
BAETISCA	0	2	0		

ALL EPHEMEROPTERA					152

B-147

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/10/83
TRANSECT 16 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	7	0	0		

HYDROPSYCHE	3	1	0		

ALL TRICHOPTERA					76
ACARINA					
	0	5	0		34
GASTROPODA					
AMNICOLA	1	1	2		

PLEUROCERA ACUTA	2	1	1		

ALL GASTROPODA					55
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	16	42	22		

SPHAERIUM	1	8	1		

ALL SPHAERIIDAE					620
UNIONIDAE					
ELLIPTIO DILATATUS	1	0	0		

LEPTODEA FRAGILIS	1	0	0		

PLEUROBEMA CORDATUM	1	0	0		

PROPTERA ALATA	0	1	0		

TRUNCILLA TRUNCATA	1	0	0		

OTHER	1	1	0		
ALL PELECYPODA					668

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 17 STATION 1			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
-----					-----
CNIDARIA					
HYDRA		280	452	178	6267

ALL CNIDARIA					6267
RHABDOCOELA		14	26	23	434
NEMERTINEA		0	4	1	34
NEMATODA		202	182	87	3244
HIRUDINEA					
ERPOBDELLIDAE		1	1	3	
GLOSSIPHONIIDAE		0	0	1	
ALL HIRUDINEA					41
OLIGOCHAETA					
NAIS		0	1	0	

SPIROSPERMA		1	3	18	

OTHER					
ALL OLIGOCHAETA		628	708	432	12341
POLYCHAETA					
MANAYUNKIA SPECIOSA		4	19	16	269

ALL POLYCHAETA					269
CLADOCERA					
ALONA		1	0	0	7

ALL CLADOCERA					7

B-149

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/10/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPOIDIDAE	6	0	0	

CYCLOPS BICUSPIDATUS	0	28	16	

DIAPTOMUS	2	1	0	

HARPACTICOIDA	140	123	100	

LIMNOCALANUS	0	2	0	

MACROCYCLOPS	1	0	0	

MESOCYCLOPS	1	0	0	

ALL COPEPODA				2882
AMPHIPODA				
GAMMARUS	1	6	0	

HYALELLA AZTECA	1	2	0	

ALL AMPHIPODA				69
ISOPODA				
ASELLUS	1	3	0	

LIRCEUS	1	1	2	

ALL ISOPODA				55
DIPTERA				
CERATOPOGONIDAE	4	4	3	
CHIRONOMIDAE	145	161	133	3023
ALL DIPTERA				3098
EPHEMEROPTERA				
CAENIDAE	3	3	9	

EPHEMERIDAE				
HEXAGENIA	3	3	0	

ALL EPHEMEROPTERA				145

B-150

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/10/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	1	1	1	
HYDROPSYCHE	2	1	0	
LEPTOCERIDAE				
DECETIS	0	7	0	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	2	0	1	
ALL TRICHOPTERA				110
ACARINA				
	2	7	2	76
GASTROPODA				
ANNICOLA	16	11	3	
ELIMIA LIVESCENS	1	0	0	
PHYSA	0	1	0	
PLEUROCERA ACUTA	1	0	1	
ALL GASTROPODA				234
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	28	7	4	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				275
UNIONIDAE				
ELLIPTIO DILATATUS	0	1	0	
PLEUROBEMA CORDATUM	0	1	0	
ALL PELECYPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 17 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	189	342	177	4876	
ALL CNIDARIA				4876	
RHABDOCELA	0	1	1	14	
NEMERTINEA	2	0	2	28	
NEMATODA	117	143	123	2638	
OLIGOCHAETA					
SPIROSPERMA	13	9	4		
OTHER					
ALL OLIGOCHAETA	113	239	129	3492	
POLYCHAETA					
MANAYUNKIA SPECIOSA	666	468	345	10185	
ALL POLYCHAETA				10185	
CLADOCERA					
DAPHNIA	0	1	3	28	
ALL CLADOCERA				28	
COPEPODA					
DIAPYCNUS	0	2	4		
HARPACTICOIDA	6	75	10		
LIMNOCALANUS	1	1	0		
MESOCYCLOPS	1	0	0		
ALL COPEPODA				689	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/10/83

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS				ESTIMATED NO./SQ. METER
	1	2	3	2	
OSTRACODA		2	1	2	34
DIPTERA					
CERATOPOGONIDAE	1	0	0		
CHIRONOMIDAE	42	21	47		758
ALL DIPTERA					764
Ephemeroptera					
CAENIDAE	1	0	0		
CAENIS					
EPHEMERIDAE					
HEXAGENIA	1	3	2		
ALL EPHEMEROPTERA					48
TRICHOPTERA					
H. DROPSYCHIDAE					
CHEMATOPSYCHE	2	1	0		
LEPTOCERIDAE					
NECTOPSYCHE	0	1	0		
DECETIS	5	3	4		
ALL TRICHOPTERA					110
ACARINA	0	1	1		14
GASTROPODA					
ANNICOLA	3	0	0		
ELIMIA LIVESCENS	0	2	1		
PLEUROCERA ACUTA	0	0	2		
ALL GASTROPODA					95

B-153

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/10/83
TRANSECT 17 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE	15	4	17	
PISIDIUM				
-----	1	0	3	
SPHAERIUM				

ALL SPHAERIIDAE				275
UNIONIDAE	0	0	1	
ALL PELECYPODA				282

B-154

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/10/83
DETROIT RIVER		TRANSECT 17 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	24	116	63	1398	
HYDRA				1398	
ALL CNIDARIA					
RHABDOCOELA	1	0	0	7	
NEMERTINEA	2	2	4	55	
NEMATODA	76	111	48	1618	
OLIGOCHAETA					
SPIROSPERMA	33	18	24		
OTHER	45	30	92	1667	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	2005	155	682	19572	
ALL POLYCHAETA				19572	
COPEPODA					
DIATOMUS	2	0	0		
LIMNOCALANUS	2	2	1		
ALL COPEPODA				48	
OSTRACODA	0	0	2	14	

B-155

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/10/83

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	13	11	6	207
ALL DIPTERA				213
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	1	0	

BAETISCIDAE				
BAETISCA	0	0	1	

ALL EPHEMEROPTERA				21
TRICHOPTERA				
LEPTOCERIDAE				
DECETIS	1	0	0	

ALL TRICHOPTERA				7
ACARINA				
GASTROPODA	2	0	0	14
AMNICOLA				

ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	1	13	

SPHAERIUM	1	5	0	

ALL SPHAERIIDAE				172
ALL PELECYPODA				172

B-156

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER TRANSECT 18 STATION 1					
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER	
	1	2	3		
CNIDARIA					
HYDRA	87	8	32	875	
ALL CNIDARIA				875	
RHABDOCOELA	11	17	41	475	
NEMERTINEA	4	0	0	28	
NEMATODA	80	17	8	723	
HIRUDINEA					
ERPOBDELLIDAE	1	0	0	7	
OLIGOCHAETA					
NAIS	16	0	32		
SPIROSPERMA	372	14	230		
OTHER	104121188712250			241123	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	404	0	0	2782	
ALL POLYCHAETA				2782	
CLADOCERA					
DAPHNIA	1	0	1		
ILYOCRYPTUS	4	8	8		
ALL CLADOCERA				152	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 18 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	6	0	8		
DIPTOMUS	14	0	0		
LIMNOCALANUS	1	0	0		
ALL COPEPODA				200	
OSTRACODA	1	8	1		69
AMPHIPODA					
GAMMARUS	0	1	0		7
ALL AMPHIPODA					7
DIPTERA					
CERATOPOGONIDAE	8	.1	2		
CHIRONOMIDAE	13	6	6		172
ALL DIPTERA					248
EPHEMEROPTERA					
EPHEMERIDAE	1	3	0		
HEXAGENIA					
ALL EPHEMEROPTERA				28	
LEPIDOPTERA	0	0	2		14
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	0	0		
ALL TRICHOPTERA					7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 18 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
ANNICOLA	1	0	1		

GYRAULUS	0	0	1		

ALL GASTROPODA				21	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	22	20	18		413

ALL PELECYPODA					413

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 18 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	103	19	0		840
HYDRA					
ALL CNIDARIA					840
RHABDOCOELA	16	24	3		296
NEMERTINEA	3	194	2		1370
NEMATODA	275	5	31		2142
OLIGOCHAETA					
SPIROSPERMA	52	62	5		
OTHER	521625768	695			218982
ALL OLIGOCHAETA					
CLADOCERA					
DAPHNIA	0	1	0		
ILYOCRYPTUS	0	0	1		
ALL CLADOCERA					14
COPEPODA					
DIAPYCNUS	8	1	7		
LIMNOCALANUS	1	0	1		
ALL COPEPODA					124
OSTRACODA	0	0	1		7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 16 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	20	13	0		

HYALELLA AZTECA	1	0	0		

ALL AMPHIPODA					234
DIPTERA					
CERATOPOGONIDAE	1	0	1		
CHIRONOMIDAE	38	35	2		516
PSYCHODIDAE	0	2	0		
TIPULIDAE	1	0	0		
ALL DIPTERA					551
EPHEMEROPTERA					
CAENIDAE	0	1	0		
CAENIS					

EPHEMERIDAE	1	2	0		
HEXAGENIA					

HEPTAGENIIDAE	0	1	0		
STENONEMA					

ALL EPHEMEROPTERA					34
LEPIDOPTERA	0	1	0		7
TRICHOPTERA					
HYDROPSYCHIDAE	1	0	0		
CHEMATOPSYCHE					

HYDROPTILIDAE	4	0	0		
HYDROPTILA					

ALL TRICHOPTERA					34

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 18 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ODONATA					
COENAGRIONIDAE	0	1	0	7	
ACARINA					
	6	3	0	62	
TARDIGRADA					
	0	16	1	117	
GASTROPODA					
AMNICOLA	1	1	1		
BITHYNIA	0	1	0		
FERISSIA	1	23	1		
PHYSA	3	2	0		
VALVATA TRICARINATA	0	0	1		
ALL GASTROPODA				241	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	29	22	1	358	
ALL PELECYPODA				358	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 18 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	2	0		14

ALL CNIDARIA					14
RHABDOCOELA	5	9	28		289
NEMATODA	3	2	11		110
OLIGOCHAETA					
SPIROSPERMA	10	39	37		

OTHER	2239	3077	80		37753
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	3	0	0		21

ALL POLYCHAETA					21
COPEPODA					
CYCLOPOIDIDAE	1	1	0		

DIAPTOMUS	10	1	10		

HARPACTICOIDA	0	0	1		

LIMNOCALANUS	5	0	2		

ALL COPEPODA					213
OSTRACODA	0	0	2		14
TERRESTRIAL INSECT	0	0	1		7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 18 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	4	2	1		48
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	0	2	0		

ALL EPHEMEROPTERA					14
ACARINA					
	0	0	1		7
GASTROPODA					
AMNICOLA	1	0	0		

GYRAULUS	0	0	1		

ALL GASTROPODA					14
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	6	6	13		172

ALL PELECYPODA					172

B-164

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER	TRANSECT 19 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		7	1	0	55
HYDRA					

ALL CNIDARIA					55
RHABDOCELA		58	3	15	523
NEMERTINEA		10	0	5	103
NEMATODA		59	38	32	888
OLIGOCHAETA					
SPIROSPERMA		30	7	26	

OTHER		414	191	397	7334
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		555	68	216	5778

ALL POLYCHAETA					5778
COPEPODA					
CYCLOPS BICUSPIDATUS		1	1	0	

DIAPYCNUS		3	5	1	

LIMNOCALANUS		0	1	1	

ALL COPEPODA					90
AMPHIPODA					
GAMMARUS		2	2	3	48

ALL AMPHIPODA					48

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/11/83

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CERATOPOGONIDAE	56	33	33	
CHIRONOMIDAE	15	14	13	289
EMPIDIDAE	1	2	0	
ALL DIPTERA				1150
EPHEMEROPTERA				
CAENIDAE				
CAENIS	11	9	1	
BAETISCIDAE				
BAETISCA	1	0	0	
ALL EPHEMEROPTERA				152
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	1	
HYDROPTILIDAE				
HYDROPTILA	0	2	0	
LEPTOCERIDAE				
NECTOPSYCHE	0	1	1	
OECETIS	8	0	0	
ALL TRICHOPTERA				96
ACARINA	0	4	0	28

B-166

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/11/83
TRANSECT 19 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	6	9	7	
ELIMIA LIVESCENS	1	0	2	
FERISSIA	2	1	1	
PHYSA	1	0	1	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	53	51	46	1033
ALL PELECYPODA				1033

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER	TRANSECT 19 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		1	5	47	365
HYDRA					

ALL CNIDARIA					365
RHABDOCOELA		3	0	9	83
NEMERTINEA		30	19	47	661
NEMATODA		5	15	13	227
OLIGOCHAETA					
SPIROSPERMA		12	6	11	

OTHER		276	204	283	5454
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		782	1008	775	17664

ALL POLYCHAETA					17664
CLADOCERA					
DAPHNIA		0	1	1	14

ALL CLADOCERA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 19 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	3	8	5		

DIAPTOMUS	3	12	7		

EPISHURA LACUSTRIS	1	0	0		

HARPACTICOIDA	0	1	3		

LIMNOCALANIS	3	2	4		

PARACYCLOPS	0	1	0		

ALL COPEPODA				365	
AMPHIPODA					
GAMMARUS	0	0	1	7	

ALL AMPHIPODA				7	
DIPTERA					
CERATOPOGONIDAE	0	1	0		
CHIRONOMIDAE	1	0	0	7	
EMPIDIDAE	1	0	0		
ALL DIPTERA				21	
EPEMEROPTERA					
EPEMERIDAE	0	2	1		
HEXAGENIA					

BAETISCIDAE	0	1	0		
BAETISCA					

ALL EPEMEROPTERA				28	
GASTROPODA					
AMNICOLA	3	5	0		

ELIMIA LIVESCENS	1	0	2		

ALL GASTROPODA				76	

B-169

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/11/83
TRANSECT 19 STATION 2 (CONT'D)		
TAXON	GRAB COUNTS	ESTIMATED
	1 2 3	NO./SQ. METER
-----	-----	-----
PELECYPODA		
SPHAERIIDAE		
PISIDIUM	15 29 5	337

ALL PELECYPODA		337

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 19 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		167	79	18	1818
HYDRA					
ALL CNIDARIA					1818
RHABDOCELA		0	30	0	207
NEMERTINEA		49	80	30	1085
NEMATODA		7	2	6	103
OLIGOCHAETA					
NAYS		0	0	1	
SPIROSPERMA		9	81	27	
OTHER		26	709	41	6157
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		1	5	1	48
ALL POLYCHAETA					48
CLADOCERA					
DAPHNIA		1	1	0	14
ALL CLADOCERA					14
COPEPODA					
CYCLOPS BICUSPIDATUS		3	5	0	
DIAPTOMUS		5	5	3	
LIMNOCALANUS		0	3	2	
ALL COPEPODA					179

B-171

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/11/83

TRANSECT 19 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	3	1	0	28
EPHEMEROPTERA				
EPHEMERIDAE	1	0	0	
HEXAGENIA				

ALL EPHEMEROPTERA				7
LEPIDOPTERA				
	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	1	

POLYCENTROPODIDAE				
POLYCENTROPUS	0	2	0	

ALL TRICHOPTERA				28
GASTROPODA				
AMNICOLA	1	3	0	

ELIMIA LIVESCENS	4	7	0	

FERISSIA	0	2	0	

ALL GASTROPODA				117
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	2	0	14

ALL PELECYPODA				14

B-172

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 20 STATION 1			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		8	8	93	751
ALL CNIDARIA					751
RHABDOCOELA		8	11	94	778
NEMERTINEA		0	2	0	14
NEMATODA		26	8	102	937
OLIGOCHAETA					
NAIS		0	2	0	
SPIROSPERMA		13	22	59	
OTHER					
ALL OLIGOCHAETA		192	346	2972	24833
POLYCHAETA					
MANAYUNKIA SPECIOSA		13	7	32	358
ALL POLYCHAETA					358
COPEPODA					
DIAPTOMUS		2	0	8	
HARPACTICOIDA		2	0	8	
ALL COPEPODA					138
AMPHIPODA					
GAMMARUS		4	3	8	
HYALELLA AZTECA		3	3	0	
ALL AMPHIPODA					145

B-173

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 20 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ISOPODA					
ASELLUS	1	2	0		21

ALL ISOPODA					21
TERRESTRIAL INSECT					
	2	0	0		14
DIPTERA					
CERATOPOGONIDAE	6	0	2		
CHIRONOMIDAE	13	48	41		708
EMPIDIDAE	1	0	0		
ALL DIPTERA					771
EPHEMEROPTERA					
CAENIDAE					
CAENIS	8	6	1		

BAETISCIDAE					
BAETISCA	0	1	0		

ALL EPHEMEROPTERA					110
LEPIDOPTERA					
	0	2	2		28
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	0	0		

POLYCENTROPODIDAE					
NEURECLIPSIS	1	2	1		

ALL TRICHOPTERA					34
ODONATA					
COENAGRIONIDAE	0	0	1		7

B-174

MACROZOEBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 20 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	1	8	6	103	
GASTROPODA					
ANNICOLA	5	6	14		
ELIMIA LIVESCENS	1	3	1		
FERISSIA	1	0	0		
GYRAULUS	1	4	0		
PHYSA	1	3	3		
ALL GASTROPODA				296	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	24	9	17		344
ALL PELECYPODA					344

B-175

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 20 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		2	2	12	110
HYDRA					

ALL CNIDARIA					110
NEMERTINEA		2	3	1	41
NEMATODA		314	262	79	4511
OLIGOCHAETA					
NATS		0	5	0	

SPIROSPERMA		79	1	5	

OTHER		136	51	17	
ALL OLIGOCHAETA					2025
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	1	2	21

ALL POLYCHAETA					21
CLADOCERA					
DAPHNIA		2	0	2	28

ALL CLADOCERA					28
COPEPODA					
CYCLOPS BICUSPIDATUS		1	1	0	

DIAPTOMUS		4	0	2	

LIMNOCALANUS		4	6	1	

ALL COPEPODA					131
DIPTERA					
CHIRONOMIDAE		6	4	1	76

MACROZOEBENTHOS PONAR GRAB COUNT DATA				5/11/63
TRANSECT 20 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	0	0	

ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	2	

ALL TRICHOPTERA				14
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	1	0	4	34

ALL GASTROPODA				34

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 20 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		110	66	480	4518
ALL CNIDARIA					4518
RHABDOCOELA		0	1	1	14
NEMERTINEA		8	7	29	303
NEMATODA		7	12	25	303
OLIGOCHAETA					
SPIROSPERMA		0	2	2	
OTHER		28	5	116	1054
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		78	28	32	950
ALL POLYCHAETA					950
CLADOCERA					
BOSMINA		0	1	0	
DAPHNIA		1	2	2	
ALL CLADOCERA					41

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
TRANSECT 20 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPOIDIDAE	0	2	0		

CYCLOPS BICUSPIDATUS	4	0	5		

DIAPTOMUS	8	1	6		

LIMNOCALANUS	3	3	7		

ALL COPEPODA				269	
TERRESTRIAL INSECT	0	0	1	7	
DIPTERA					
CHIRONOMIDAE	3	0	3	41	
EPHEMEROPTERA					
EPHEMERIDAE	0	1	0		
HEXAGENIA					

BAETISCIDAE	0	2	5		
BAETISCA					

ALL EPHEMEROPTERA				55	
TRICHOPTERA					
HYDROPSYCHIDAE	2	0	4		
CHELMATOPSYCHE	0	5	7		

HYDROPSYCHE					

LEPTOCERIDAE	0	1	0		
CERACLEA					

ALL TRICHOPTERA				131	
PELECYPODA					
SPHAERIIDAE	0	1	0	7	
PISIDIUM					

ALL PELECYPODA				7	

B-179

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 21 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	17	11	25	365	

ALL CNIDARIA				365	
RHABDOCELA	72	51	62	1274	
NEMERTINEA	2	2	3	48	
NEMATODA	73	62	32	1150	
OLIGOCHAETA					
SPIROSPERMA	30	72	71		

OTHER	430	1017	356	13608	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	9	98	51	1088	

ALL POLYCHAETA				1088	
CLADOCERA					
DAPHNIA	0	0	1	7	

ALL CLADOCERA				7	
COPEPODA					
CYCLOPOIDIDAE	0	0	1		

DIAPTOMUS	1	0	3		

LIMNOCALANUS	2	0	6		

ALL COPEPODA					90

5/11/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
OSTRACODA	0	0	1	7
AMPHIPODA				
GAMMARIDAE	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CERATOPOGONIDAE	2	0	0	
CHIRONOMIDAE	0	3	2	34
ALL DIPTERA				48
TRICHOPTERA				
LEPTOCERIDAE	2	0	0	
OECETIS				
ALL TRICHOPTERA				14
ACARINA	1	0	2	21
GASTROPODA				
AMNICOLA	4	18	8	
FERISSIA	1	0	0	
PHYSA	0	0	1	
VALVATA SINCERA	2	0	0	
ALL GASTROPODA				234
PELECYPODA				
SPHAERIIDAE	5	17	34	386
PISIDIUM				
ALL PELECYPODA				386

B-181

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 21 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER	
	1	2	3		
CNIDARIA	109	430	18	3836	
HYDRA					
ALL CNIDARIA				3836	
TRICLADIDA	2	1	0	21	
NEMERTINEA	1	6	0	48	
NEMATODA	43	32	7	565	
OLIGOCHAETA					
SPIROSPERMA	1	0	0		
OTHER	34	12	34	558	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	53	39	2	647	
ALL POLYCHAETA				647	
CLADOCERA					
DAPHNIA	1	0	5	41	
ALL CLADOCERA				41	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/11/83
TRANSECT 21 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	3	0	0	

CYCLOPS BICUSPIDATUS	0	7	0	

DIAPTOMUS	4	3	1	

HARPACTICOIDA	1	0	0	

LIMNOCALANUS	6	1	5	

ALL COPEPODA				213
AMPHIPODA				
GAMMARUS	0	1	0	7

ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	1	1	1	21
EPHEMEROPTERA				
EPHEMERIDAE	2	1	1	
HEXAGENIA				

BAETISCIDAE				
BAETISCA	0	1	1	

ALL EPHEMEROPTERA				41
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	4	6	

LEPTOCERIDAE				
CERACLEA	0	0	2	

DECETIS	1	0	0	

ALL TRICHOPTERA				90
GASTROPODA				
ELIMIA LIVESCENS	1	1	0	14

ALL GASTROPODA				14

B-183

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/11/83
DETROIT RIVER		TRANSECT 21 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		386	622	78	7479
HYDRA					

ALL CNIDARIA					7479
TRICLADIDA		1	0	0	7
NEMERTINEA		12	9	0	145
NEMATODA		4	20	5	200
OLIGOCHAETA					
SPIROSPERMA		0	0	1	

OTHER		22	39	17	
ALL OLIGOCHAETA					544
POLYCHAETA					
MANAYUNKIA SPECIOSA		32	108	0	964

ALL POLYCHAETA					964
CLADOCERA					
BOSMINA		1	0	0	

DAPHNIA		1	0	2	

ALL CLADOCERA					28
COPEPODA					
CYCLOPS BICUSPIDATUS		2	3	0	

DIAPTOMUS		1	7	0	

LIMNOCALANUS		0	2	1	

ALL COPEPODA					110

5/11/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	3	4	0	48
EPHEMEROPTERA				
CAENIDAE	0	1	0	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	2	0	1	
HEPTAGENIIDAE				
STENONEMA	0	2	0	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE	5	14	1	
CHEMATOPSYCHE				
HYDROPSYCHE	0	1	0	
ALL TRICHOPTERA				145
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	2	0	0	
ELIMIA LIVESCENS	0	1	0	
FERISSIA	1	0	0	
ALL GASTROPODA				28

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/11/83
TRANSECT 21 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	7	7	1	

SPHAERIUM	3	0	0	

ALL SPHAERIIDAE				124
ALL PELECYPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	1	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
BOSMINA	1	0	0		

DAPHNIA	51	26	35		

ALL CLADOCERA					778
COPEPODA					
CYCLOPOIDIDAE	2	0	0		

DIAPYOMUS	7	3	5		

EPISHURA LACUSTRIS	11	0	0		

ALL COPEPODA					193
TERRESTRIAL INSECT	8	0	1		62
DIPTERA					
CHIRONOMIDAE	18	13	12		296

B-187

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	1	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CLADOCERA					
DAPHNIA		64	44	1	

DAPHNIA GALEATA MENDOTAE		0	0	30	

DAPHNIA PULEX		0	0	4	

ALL CLADOCERA					985
COPEPODA					
DIPTOMUS		5	15	0	

EPISHURA LACUSTRIS		16	12	9	

LIMNOCALANUS		0	0	1	

ALL COPEPODA					389
TERRESTRIAL INSECT		2	0	0	14
DIPTERA					
CHIRONOMIDAE		20	17	19	386

B-188

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	1	STATION	3	
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CLADOCERA		20	26	37	
DAPHNIA					
DIAPHANASOMA	.	1	0	0	
HOLOPEDJUM		0	1	0	
ALL CLADOCERA					585
COPEPODA					
DIPTOMUS		2	4	1	
EPISHURA LACUSTRIS		0	3	0	
LIMNOCALANUS		0	1	0	
ALL COPEPODA					76
DIPTERA					
CHIRONOMIDAE		30	6	13	337

B-189

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	2	STATION 1		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA					
HYDRA				27 90 85	1391

ALL CNIDARIA					1391
RHABDOCELA				7 9 11	186
NEMERTINEA				3 1 2	41
NEMATODA				3 16 4	158
HIRUDINEA					
ERPOBDELLIDAE				0 1 0	
GLOSSIPHONIIDAE					
HELOBDELLA PAPILLATA				0 0 1	

PISCICOLIDAE					
PISCICOLA				0 1 0	

ALL HIRUDINEA					21
OLIGOCHAETA					
NAIS				0 41 0	

SPIROSPERMA				0 38 5	

STYLARIA				2 2 18	

OTHER				465 441 322	
ALL OLIGOCHAETA					9184

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
TRANSECT 2 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
DAPHNIA	17	33	26		

SIDA CRYSTALLINA	0	2	2		

ALL CLADOCERA					551
COPEPODA					
DIAPYOMUS	5	17	16		

EPISHURA LACUSTRIS	4	1	17		

HARPACTICOIDA	0	16	0		

ALL COPEPODA					523
OSTRACODA	0	2	0	14	
AMPHIPODA					
GAMMARUS	17	21	19		

HYALELLA AZTECA	1	1	2		

ALL AMPHIPODA					420
DIPTERA					
CHIRONOMIDAE	27	128	95	1722	
EPHEMEROPTERA					
CAENIDAE	0	2	8		
CAENIS					

EPHEMERIDAE	0	0	2		
HEXAGENIA					

HEPTAGENIIDAE	0	2	1		
STENONEMA					

ALL EPHEMEROPTERA					103

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/83
TRANSECT 2 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	1	0	
ALL COLEOPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	7	0	
HYDROPSYCHE	0	3	2	
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	13	1	
ALL TRICHOPTERA				193
ACARINA	0	10	0	69
GASTROPODA				
AMNICOLA	26	132	81	
FERISSIA	1	0	2	
GYRAULUS	0	8	1	
PHYSA	3	14	32	
ALL GASTROPODA				2066
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	2	0	21
ALL PELECYPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/11/83
ST. CLAIR RIVER		TRANSECT 2		STATION 2		
TAXON		1	2	3	GRAB COUNTS	ESTIMATED NO./SQ. METER
CNIDARIA		236	1560	537		16067
HYDRA						
ALL CNIDARIA						16067
RHABDOCELA		13	26	2		282
NEMERTINEA		11	0	5		110
NEMATODA		0	1	5		41
OLIGOCHAETA						
SPIROSPERMA		31	26	30		
OTHER		8	101	32		1570
ALL OLIGOCHAETA						
CLADOCERA						
DAPHNIA		1	4	4		62
ALL CLADOCERA						62
COPEPODA						
DIPTOMUS		0	3	0		21
ALL COPEPODA						21
AMPHIPODA						
GAMMARUS		6	10	0		
HYALELLA AZTECA		3	1	0		
ALL AMPHIPODA						138

B-193

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	5	5	5		103
EMPIDIDAE	0	0	1		
ALL DIPTERA					110
Ephemeroptera					
BAETISCIDAE					
BAETISCA	0	0	1		
HEPTAGENIIDAE					
STENONEMA	2	1	0		
ALL EPHEMEROPTERA					28
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	1	1	1		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	14	37	8		
HYDROPSYCHE	7	32	3		
OTHER	1	29	0		
POLYCENTROPODIDAE					
NEURECLIPSIS	6	2	1		
ALL TRICHOPTERA					985
ACARINA	1	3	2		41

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/11/83
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	26	49	20		
ELIMIA LIVESCENS	0	11	17		
FERISSIA	4	3	0		
GYRAULUS	1	0	0		
LYMAEA	2	0	1		
PHYSA	8	7	10		
VALVATA SINCERA	0	0	1		
ALL GASTROPODA					1102
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	2	17	9		
SPHAERIUM	1	0	0		
ALL SPHAERIIDAE					200
ALL PELECYPODA					200

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	2	STATION 3		
TAXON		1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA		888	1499	1488	26686
HYDRA					
ALL CNIDARIA					26686
RHABDOCOELA		9	5	12	179
NEMERTINEA		1	21	1	158
NEMATODA		2	6	1	62
OLIGOCHAETA					
SPIROSPERMA		1	0	0	
OTHER		4	0	9	
ALL OLIGOCHAETA					96
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	0	1	7
ALL POLYCHAETA					7
CLADOCERA					
BOSMINA		0	2	0	
CHYDORUS		0	1	0	
DAPHNIA		5	4	10	
HOLOPEDIIUM		0	1	0	
ALL CLADOCERA					158

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/83
TRANSECT 2 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE				
CYCLOPS BICUSPIDATUS	0	0	3	
DIAPTOMUS	0	5	0	
EPISHURA LACUSTRIS	4	7	9	
HARPACTICOIDA	3	1	0	
MESOCYCLOPS	0	1	0	
ALL COPEPODA	0	1	0	234
AMPHIPODA				
GAMMARUS	0	0	1	
HYALELLA AZTECA	1	1	0	
ALL AMPHIPODA				21
DIPTERA				
CHIRONOMIDAE	3	4	2	62
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	8	1	8	
ALL EPHEMEROPTERA				117

B-197

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/83
TRANSECT 2 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	2	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	24	23	52	
HYDROPSYCHE	8	6	7	
LEPTOCERIDAE				
CERACLEA	0	0	1	
POLYCENTROPIDIDAE				
NEURECLIPSIS	0	0	1	
RHYACOPHILIDAE				
PROTOPTILA	12	4	7	
ALL TRICHOPTERA				1012
ACARINA	10	39	5	372
GASTROPODA				
AMNICOLA	1	1	0	
ELIMIA LIVESCENS	16	59	11	
LYMNAEA	1	0	0	
PHYSA	0	3	2	
ALL GASTROPODA				647
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	0	1	0	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	3	STATION 1		
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	21	17	75	778	
ALL CNIDARIA				778	
TRICLADIDA	0	2	0	14	
NEMERTINEA	8	1	9	124	
OLIGOCHAETA					
SPIROSPERMA	0	0	2		
OTHER	17	2	11		
ALL OLIGOCHAETA				220	
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	1	0	7	
ALL POLYCHAETA				7	
CLADOCERA					
BOSMINA	2	1	0		
DAPHNIA	7	3	4		
ALL CLADOCERA				117	
COPEPODA					
DIAPTOMUS	6	0	1		
EPISHURA LACUSTRIS	0	4	1		
ALL COPEPODA				83	
AMPHIPODA					
HYALELLA AZTECA	1	0	0	7	
ALL AMPHIPODA				7	

B-149

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
TRANSECT 3 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TERRESTRIAL INSECT	0	0	1	7	
DIPTERA					
CHIRONOMIDAE	7	4	25	248	
EMPHIDIDAE	2	2	0		
ALL DIPTERA				275	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	4	0		
HYDROPSYCHE	18	28	5		
LEPTOCERIDAE					
CERACLEA	2	2	0		
ALL TRICHOPTERA				413	
GASTROPODA					
AMNICOLA	2	0	3		
ELIMIA LIVESCENS	0	2	0		
ALL GASTROPODA				48	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
ST. CLAIR RIVER	TRANSECT	3	STATION 2		
TAXON	1	2	3	GRAB COUNTS	ESTIMATED NO./SQ. METER
CHNIDARIA	552	956	352		12809
HYDRA					
ALL CHNIDARIA					12809
RHABDOCELA	2	4	2		55
NEWERTINEA	15	23	21		406
NEMATODA	1	0	1		14
OLIGOCHAETA	21	18	2		282
POLYCHAETA					
MANAYUNKIA SPECIOSA	1	0	0		7
ALL POLYCHAETA					7
CLADOCERA					
BOSMINA	0	1	4		
DAPHNIA	21	12	12		
HOLOPENIDUM	0	0	1		
ALL CLADOCERA					351

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/83
TRANSECT 3 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPOIDAE	1	1	0		

CYCLOPS BICUSPIDATUS	1	0	0		

DIAPYCNUS	2	0	3		

EPISHURA LACUSTRIS	0	0	1		

ALL COPEPODA					62
AMPHIPODA					
HYALELLA AZTECA	2	0	0		14

ALL AMPHIPODA					14
DIPTERA					
CHIRONOMIDAE	5	5	0		69
EMPIDIDAE	1	0	0		76
ALL DIPTERA					
EPHEMEROPTERA					
BAETIDAE	1	0	0		
BAETIS					

HEPTAGENIIDAE	1	0	0		
STENONEMA					

ALL EPHEMEROPTERA					14
TRICHOPTERA					
HYDROPSYCHIDAE	9	1	5		
HYDROPSYCHE					

LEPTOCERIDAE	0	1	0		
GERACLEA					

MYSTACIDES	1	0	0		

ALL TRICHOPTERA					117
PLECOPTERA					
ISOGENOIDES	0	0	1		7

ALL PLECOPTERA					7

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/83
TRANSECT 3 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	0	3	0	
ELINIA LIVESCENS	12	16	23	
LYMNAEA	5	0	0	
PHYSA	0	0	1	
ALL GASTROPODA				413
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	1	0	
SPHAERIUM	1	2	0	
ALL SPHAERIIDAE				48
ALL PELECYPODA				48

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/83
ST. CLAIR RIVER	TRANSECT 3	STATION 3		
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
FISH				
COTTUS BAIRDII	0	1	0	7
ALL FISH				7
CNIDARIA				
HYDRA	0	1555	7	10757
ALL CNIDARIA				10757
RHABDOCOELA	0	84	0	647
NEMERTINEA	0	29	2	213
NEMATODA	106	1	119	1956
OLIGOCHAETA				
STYLARIA	0	2	0	
OTHER	22	68	43	930
ALL OLIGOCHAETA				
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	1	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	0	2	0	
DAPHNIA	0	67	5	
LEPTODORA KIMDITII	0	1	0	
ALL CLADOCERA				516

10/11/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	0	1	
CYCLOPS BICUSPIDATUS	0	4	0	
DIAPTOMUS	0	1	1	
EPISHURA LACUSTRIS	1	12	2	
ALL COPEPODA				152
AMPHIPODA				
GAMMARUS	1	1	10	
HYALELLA AZTECA	0	0	7	
ALL AMPHIPODA				131
ISOPODA				
LIRCEUS	0	0	2	14
ALL ISOPODA				14
DIPTERA				
CHIRONOMIDAE	0	11	2	90
EPHEMEROPTERA				
EPHEMERIDAE	1	0	3	
HEXAGENIA				
BAETIDAE	1	0	0	
BAETIS				
HEPTAGENIIDAE				
STENONEMA	1	1	5	
ALL EPHEMEROPTERA				83

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/11/83
TRANSECT 3 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE					

HYDROPSYCHE					

HYDROPTILIDAE					
LEPTOCERIDAE					
CERACLEA					

DE CETIS					

RHYACOPHILIDAE					
PROTOPTILA					

ALL TRICHOPTERA					427
ACARINA					14
GASTROPODA					
ELIMIA LIVESCENS					

GYRAULUS					

LYNNAEA					

ALL GASTROPODA					1336
PELECYPODA					
SPHAERIJDAE					
PISIDIUM					

SPHAERIUM					

ALL SPHAERIJDAE					337
ALL PELECYPODA					337

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT	4	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	197	391	0	4049	
HYDRA					
ALL CNIDARIA				4049	
RHABDOCOELA	54	1	3	399	
TRICLADIDA	0	45	0	310	
NEMERTINEA	17	3	14	234	
NEMATODA	24	9	90	847	
HIRUDINEA					
HIRUDINEA	0	0	1		
ERPOBDELLIDAE	1	2	0		
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	0	0	2		
ALL HIRUDINEA				41	
OLIGOCHAETA					
NAIS	2	5	0		
SPIROSPERMA	34	18	1		
STYLARIA	40	30	9		
OTHER	67	29	144		
ALL OLIGOCHAETA				2610	

B-207

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 4 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CLADOCERA	1	0	0	
BOSMINA				

DAPHNIA	8	2	0	

SIDA CRYSTALLINA	0	0	1	

ALL CLADOCERA				83
COPEPODA				
DIAPYCNUS	2	0	0	

MACROCYCLOPS	0	0	1	

ALL COPEPODA				21
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	546	485	6	

HYALELLA AZTECA	13	7	9	

PONTOPOREIA HOYI	0	4	0	

ALL AMPHIPODA				7388
ISOPODA				
AELLUS	0	0	1	7

ALL ISOPODA				7
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	107	132	49	1983

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 4 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	2	
EPHEMERIDAE				
HEXAGENIA	0	2	6	
ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	1	
HYDROPSYCHE	2	6	0	
LEPTOCERIDAE				
DECETIS	0	1	0	
ALL TRICHOPTERA				76
GASTROPODA				
AMNICOLA	333	269	6	
ELIMIA LIVESCENS	40	43	0	
GYRAULUS	128	69	1	
PHYSA	32	35	3	
PLEUROCERA ACUTA	0	0	6	
VALVATA TRICARINATA	220	103	0	
OTHER	1	0	0	
ALL GASTROPODA				8877
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	119	38	1	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				1095
ALL PELECYPODA				1095

MACROZOOBENTHOS PONAR GRAB COUNT DATA						
TRANSECT 4 STATION 2 (CONT'D)						
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	1	2	3
				NO./SQ. METER		
AMPHIPODA						
GAMMARUS						
ALL AMPHIPODA	7	5	4			110
DIPTERA						
CHIRONOMIDAE	1	1	16			124
TRICHOPTERA						
HYDROPSYCHIDAE						
CHEMATOPSYCHE	0	0	3			
HYDROPSYCHE	0	0	20			
ALL TRICHOPTERA						158
ACARINA						
GASTROPODA						
AMNICOLA	0	0	2			14
ELIMIA LIVESCENS	3	6	10			
FERISSIA	7	3	4			
GYRAULUS	0	1	0			
PHYSA	2	0	0			
VALVATA SINCERA	1	0	3			
ALL GASTROPODA	0	0	2			289
PELECYPODA						
SPHAERIIDAE						
PISIDIUM	3	2	6			76
ALL PELECYPODA						76

B-211

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT	4	STATION 3		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA					
HYDRA				21 67 61	1026
ALL CNIDARIA					1026
NEMERTINEA				1 0 8	62
NEMATODA				5 4 30	269
OLIGOCHAETA					
SPIROSPERMA				0 0 1	
OTHER				25 13 21	413
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA				1 0 0	7
ALL POLYCHAETA					7
CLADOCERA					
BOSMINA				0 1 0	
DAPHNIA				3 4 3	
ALL CLADOCERA					76
COPEPODA					
DIAPYCNUS				0 1 0	
EPISHURA LACUSTRIS				1 0 0	
ALL COPEPODA					14
AMPHIPODA					
GAMMARUS				5 5 9	
HYALELLA AZTECA				0 0 1	
ALL AMPHIPODA					138

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 4 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	0	3	5	55	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	1		
HYDROPSYCHE	0	0	11		
ALL TRICHOPTERA				83	
ACARINA	0	1	0	7	
GASTROPODA					
AMNICOLA	0	0	4		
ELIMIA LIVESCENS	4	4	6		
GYRAULUS	0	0	1		
PHYSA	0	0	2		
ALL GASTROPODA				145	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	1	1	1	21	
ALL PELECYPODA				21	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT 5 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		55	190	158	2775
HYDRA					

ALL CNIDARIA					2775
RHABDOCOELA		18	57	23	675
TRICLADIDA		7	0	0	48
NEMERTINEA		7	18	9	234
NEMATODA		1	41	7	337
HIRUDINEA					
ERPOBDELLIDAE		1	0	1	
ERPOBDELLA PUNCTATA					

ALL HIRUDINEA					14
OLIGOCHAETA					
NAIS		8	0	0	

SPIROSPERMA		81	39	21	

STYLARIA		19	164	13	

OTHER		133	153	206	
ALL OLIGOCHAETA					5764

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 5 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CLADOCERA				
DAPHNIA	16	27	42	
HOLOPEDIUM	1	0	0	
ILYOCRYPTUS	0	8	0	
ALL CLADOCERA				647
COPEPODA				
EPISHURA LACUSTRIS	0	1	0	
MACROCYCLOPS	1	1	0	
ALL COPEPODA				21
OSTRACODA	41	96	61	1364
AMPHIPODA				
GAMMARUS	69	39	95	
HYALELLA AZTECA	15	2	3	
ALL AMPHIPODA				1536
DIPTERA				
CERATOPOGONIDAE	0	2	0	
CHIRONOMIDAE	146	190	141	3285
EMPIIDAE	1	0	0	
ALL DIPTERA				3306

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 5 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	17	11	7		
EPHEMERIDAE					
HEXAGENIA	58	59	25		
BAETIDAE					
BAETIS	1	0	0		
HEPTAGENIIDAE					
STENONEMA	1	4	7		
ALL EPHEMEROPTERA				1308	
LEPIDOPTERA	1	1	0		14
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	2	1	0		
HYDROPSYCHIDAE					
HYDROPSYCHE	0	1	0		
LEPTOCERIDAE					
CERACLEA	0	1	0		
MYSTACIDES	3	0	3		
DECETIS	30	11	37		
SETODES	0	1	0		
TRIAENODES	5	1	2		
POLYCENTROPODIDAE					
POLYCENTROPUS	0	1	0		
ALL TRICHOPTERA				682	
ODONATA					
GOMPHIDAE					
GOMPHUS	0	1	0		7
ALL ODONATA					7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 5 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	1	2	1	28	
GASTROPODA					
AMNICOLA	81	225	85		
ELIMIA LIVESCENS	4	18	45		
FERISSIA	1	0	0		
GYRALULUS	3	23	9		
LYMNAEA	0	2	0		
PHYSA	12	2	8		
VALVATA TRICARINATA	13	7	0		
ALL GASTROPODA				3705	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	4	10	3	117	
ALL PELECYPODA				117	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT	5	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA				322 852 50	8428
HYDRA					

ALL CNIDARIA					8428
RHABDOCELA				10 17 0	186
TRICLADIDA				0 0 1	7
NEMERTINEA				3 1 1	34
NEMATODA				5 0 11	110
HIRUDINEA					
PISCICOLIDAE					
PISCICOLA				0 1 1	

ALL HIRUDINEA					14
OLIGOCHAETA					
SPIROSPERMA				13 5 15	

OTHER				25 2 134	
ALL OLIGOCHAETA					1336
POLYCHAETA					
MANAYUNKIA SPECIOSA				1 4 0	34

ALL POLYCHAETA					34
CLADOCERA					
DAPHNIA				19 10 19	331

ALL CLADOCERA					331

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 5 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
EPISHURA LACUSTRIS	0	5	0		

LIMNOCALANUS	1	0	0		

ALL COPEPODA					41
AMPHIPODA					
GAMMARUS	6	7	76		

HYALELLA AZTECA	0	0	2		

ALL AMPHIPODA					627
DIPTERA					
CHIRONOMIDAE	17	7	20		303
EPHEMEROPTERA					
EPHEMERIDAE	1	0	0		
HEXAGENIA					

ALL EPHEMEROPTERA					7
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	1	0	0		

HYDROPSYCHIDAE	0	3	6		
CHEUMATOPSYCHE					

HYDROPSYCHE	6	2	8		

LEPTOCERIDAE					
OECETIS	1	0	0		

ALL TRICHOPTERA					186
ODONATA					
GOMPHIDAE					
GOMPHUS	2	0	0		14
					44

ACARINA

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 5 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	36	21	51	
ELIMIA LIVESCENS	30	7	15	
FERISSIA	1	0	0	
GYRAULUS	0	0	1	
PHYSA	5	0	1	
PLEUROCERA ACUTA	0	2	2	
VALVATA TRICARINATA	8	4	4	
ALL GASTROPODA				1295
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	9	0	19	193
ALL PELECYPODA				193

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/12/83
ST. CLAIR RIVER		TRANSECT 5		STATION 3		
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		
CNIDARIA						
HYDRA	64	4	61			888
ALL CNIDARIA						888
RHABDOCOELA	3	0	0			21
NEMERTINEA	0	2	6			55
NEMATODA	1	2	2			34
OLIGOCHAETA						
NAIS	0	0	4			

SPIROSPERMA	1	0	0			

OTHER	19	4	12			275
ALL OLIGOCHAETA						
POLYCHAETA						
MANAYUNKIA SPECIOSA	0	2	0			14

ALL POLYCHAETA						14
CLADOCERA						
BOSMINA	0	0	1			

DAPHNIA	7	8	15			

SIDA CRYSTALLINA	0	0	1			

ALL CLADOCERA						220

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 5 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
DIATOMUS	0	2	3		

EPISHURA LACUSTRIS	6	4	0		

ALL COPEPODA					103
AMPHIPODA					
GAMMARUS	0	0	1		7

ALL AMPHIPODA					7
DIPTERA					
CHIRONOMIDAE	20	15	16		351
EMPIDIDAE	0	0	1		
ALL DIPTERA					358
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	0	0	1		

HYDROPSYCHIDAE					
CHEUMATOPSYCHE	1	0	11		

HYDROPSYCHE	3	0	21		

ALL TRICHOPTERA					255

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT	6	STATION	1	
TAXON					

		GRAB COUNTS		ESTIMATED	
		1	2	3	NO./SQ. METER

CNIDARIA					
HYDRA		26	0	0	179

ALL CNIDARIA					179

RHABDOCOELA		40	2	16	399
TRICLADIDA		0	28	58	588
NEMERTINEA		0	1	0	7
NEMATODA		2	18	18	262
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA		1	0	1	

HELOBDELLA STAGNALIS		2	1	1	

ALL HIRUDINEA					41
OLIGOCHAETA					
SPIROSPERMA		0	0	2	

STYLARIA		47	50	70	

OTHER		41	29	63	
ALL OLIGOCHAETA					2080
CLADOCERA					
DAPHNIA		0	1	0	

EURYCERCUS LAMELLATUS		0	1	0	

ALL CLADOCERA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
HARPACTICOIDA	1	0	0		

MACROCYCLOPS	3	0	0		

ALL COPEPODA				28	
OSTRACODA	93	52	112	1770	
AMPHIPODA					
GAMMARUS	247	221	196		

HYALELLA AZTECA	38	35	59		

ALL AMPHIPODA				5489	
ISOPODA					
ASELLUS	172	28	44	1687	

ALL ISOPODA				1687	
DIPTERA					
CHIRONOMIDAE	241	175	208	4297	
EMPIDIDAE	1	0	0		
ALL DIPTERA				4304	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	12	7	0		

EPHEMERIDAE					
HEXAGENIA	5	3	14		

ALL EPHEMEROPTERA				282	

B-224

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/12/83

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	2	0	
LEPTOCERIDAE				
CERACLEA	1	0	0	
NECTOPSYCHE	0	1	0	
DECTIS	21	8	4	
SETODES	0	1	0	
TRIAENODES	1	0	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	9	8	2	
ALL TRICHOPTERA				413
GASTROPODA				
AMNICOLA	66	41	107	
ELIMIA LIVESCENS	13	11	4	
GYRAULUS	42	35	61	
PHYSA	10	7	6	
VALVATA TRICARINATA	1	0	1	
ALL GASTROPODA				2789
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	3	6	1	69
ALL PELECYPODA				69

B-225

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT 6	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	64	138	77	1921	
HYDRA				1921	
ALL CNIDARIA				482	
RHABDOCOELA	9	39	22	386	
TRICLADIDA	17	0	39	21	
NEMERTINEA	1	0	2	165	
NEMATODA	23	0	1		
HIRUDINEA					
GLOSSIPHONIIDAE	0	0	1		
GLOSSIPHONIA COMPLANATA					
PISCICOLIDAE	0	1	0	14	
PISCICOLA					
ALL HIRUDINEA					
OLIGOCHAETA	11	1	4		
SPIROSPERMA	20	401	222		
STYLARIA	249	67	146	7720	
OTHER					
ALL OLIGOCHAETA					

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 6 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CLADOCERA				
BOSMINA	0	0	1	

DAPHNIA	39	19	4	

SIDA CRYSTALLINA	0	0	1	

ALL CLADOCERA				441
COPEPODA				
EPISHURA LACUSTRIS	1	0	0	

HARPACTICOIDA	16	0	0	

MACROCYCLOPS	1	0	0	

ALL COPEPODA				124
AMPHIPODA				
GAMMARUS	177	132	152	

HYALELLA AZTECA	7	21	14	

PONTOPOREIA HOYI	0	0	1	

ALL AMPHIPODA				3471
ISOPODA				
ASELLUS	2	0	2	28

ALL ISOPODA				28
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	336	84	208	4325
ALL DIPTERA				4332
EPHEMEROPTERA				

EPHEMERIDAE
 HEXAGENIA

 ALL EPHEMEROPTERA

 22 4 14
 399

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 6 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	0	1	0		7
ALL COLEOPTERA					
TRICHOPTERA					
HYDROPSYCHIDAE					
HYDROPSYCHE	0	0	1		
HYDROPTILIDAE					
ORTHOTRICHIA	0	1	0		
LEPTOCERIDAE					
MYSTACIDES	0	0	1		
TRIAENODES	0	1	0		
POLYCENTROPODIDAE					
POLYCENTROPUS	8	8	9		
ALL TRICHOPTERA				200	
ACARINA	2	0	0		14
GASTROPODA					
AMNICOLA	43	124	73		
ELIMIA LIVESCENS	5	2	1		
GYRAULUS	7	35	6		
PHYSA	3	38	21		
VALVATA TRICARINATA	3	3	2		
ALL GASTROPODA				2521	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	7	0	14		145
ALL PELECYPODA					145

B-228

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT 6	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	73	4	3		551
ALL CNIDARIA					551
RHABDOCOELA	41	8	5		372
TRICLADIDA	0	3	9		83
NEMERTINEA	21	1	2		165
NEMATODA	27	26	67		826
HIRUDINEA					
GLOSSIPHONIIDAE					
GLOSSIPHONIA HETEROCLITA	1	0	1		
PISCICOLIDAE					
PISCICOLA MILNERI	1	0	0		
ALL HIRUDINEA					21
OLIGOCHAETA					
SPIROSPERMA	9	28	42		
STYLARIA	27	0	0		
OTHER	403	439	456		9669
ALL OLIGOCHAETA					

B-229

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 6 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
DAPHNIA	18	0	3		

SIDA CRYSTALLINA	8	0	0		

ALL CLADOCERA					200
COPEPODA					
HARPACTICOIDA	0	9	0		

LIMNOCALANUS	0	1	0		

MACROCYCLOPS	1	0	1		

ALL COPEPODA					83
AMPHIPODA					
GAMMARUS	75	4	66		999

ALL AMPHIPODA					999
ISOPODA					
ASELLUS	0	0	4		28

ALL ISOPODA					28
DIPTERA					
CERATOPOGONIDAE	0	1	0		
CHIRONOMIDAE	311	323	250		6088
EMPIDIDAE	0	1	0		
ALL DIPTERA					6102
EPEMEROPTERA					
CAENIDAE	2	1	0		
CAENIS					

EPEMERIDAE					
HEXAGENIA	50	84	45		

ALL EPEMEROPTERA					1253

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 6 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
ALL TRICHOPTERA				14
ACARINA				
	0	0	1	7
GASTROPODA				
AMNICOLA	74	13	16	
ELIMIA LIVESCENS	0	0	2	
PHYSA	2	0	2	
ALL GASTROPODA				751
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	14	5	145
ALL PELECYPODA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER		TRANSECT 7 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	291	235	388	6294	
HYDRA				6294	
ALL CNIDARIA					
RHABDOCOELA	1	4	1	41	
TRICLADIDA	4	25	0	200	
NEMERTINEA	0	2	40	289	
NEMATODA	3	14	45	427	
OLIGOCHAETA					
NAIS	9	4	0		
SPIROSPERMA	43	74	56		
STYLARIA	71	84	36		
OTHER	151	108	34	4614	
ALL OLIGOCHAETA					
CLADOCERA					
BOSMINA	0	0	1		
DAPHNIA	14	4	2		
ALL CLADOCERA				145	

B-232

10/12/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPOIDIDAE	1	0	0	

DIAPTOMUS	16	0	10	

HARPACTICOIDA	0	1	8	

ALL COPEPODA				248
OSTRACODA				
1	2	0		21
AMPHIPODA				
GAMMARUS	155	119	8	

HYALELLA AZTECA	41	8	3	

ALL AMPHIPODA				2300
ISOPODA				
LIRCEUS	0	1	0	7

ALL ISOPODA				7
DIPTERA				
GERATOPOGONIDAE	1	2	0	
CHIRONOMIDAE	189	89	8	1970
EMPIDIDAE	0	1	0	
ALL DIPTERA				1997
EPHEMEROPTERA				
CAENIDAE				
CAENIS	41	28	10	

EPHEMERIDAE				
HEXAGENIA	11	14	4	

BAETISCIDAE				

B-233

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 7 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	4	62	1		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	1		
HYDROPSYCHE	0	7	0		
LEPTOCERIDAE					
CERACLEA	0	1	0		
NECTOPSYCHE	0	1	0		
OECETIS	3	0	0		
TRIAENODES	0	1	0		
POLYCENTROPODIDAE					
NEURECLIPSIS	0	9	0		
ALL TRICHOPTERA				620	
ACARINA	0	0	1		7
GASTROPODA					
AMNICOLA	26	68	93		
ELIMIA LIVESCENS	2	0	0		
GYRAULUS	21	18	0		
PHYSA	2	16	0		
ALL GASTROPODA				1694	
PELECYPODA					
SPHAERIIDAE	25	34	0		
PISIDIUM	0	1	0		
SPHAERIUM					
ALL SPHAERIIDAE				413	
ALL PELECYPODA				413	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT 7 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		1627	345	878	19627
HYDRA					19627
ALL CNIDARIA					19627
RHABDOCELA		0	10	22	220
TRICLADIDA		26	0	0	179
NEMERTINEA		2	3	1	41
NEMATODA		11	15	32	399
OLIGOCHAETA					
SPIROSPERMA		84	43	2	
STYLARIA		8	2	0	
OTHER		81	60	5	
ALL OLIGOCHAETA					1963
POLYCHAETA					
MANAYUNKIA SPECIOSA		8	0	0	55
ALL POLYCHAETA					55
CLADOCERA					
DAPHNIA		1	0	17	
SIDA CRYSTALLINA		0	0	1	
ALL CLADOCERA					131

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 7 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
MACROCYCLOPS	0	2	1		21
ALL COPEPODA					21
AMPHIPODA					
GAMMARUS	167	35	0		
HYALELLA AZTECA	7	1	0		
ALL AMPHIPODA					1446
TERRESTRIAL INSECT					
DIPTERA					
CHIRONOMIDAE	36	27	14		530
EPHEMEROPTERA					
CAENIDAE	46	1	0		
CAENIS					
EPHEMERIDAE					
HEXAGENIA	1	0	16		
HEPTAGENIIDAE					
STENONEMA	0	4	8		
ALL EPHEMEROPTERA					523
COLEOPTERA					
ELMIDAE	0	1	0		7

10/12/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1 2 3	ESTIMATED NO./SQ. METER
TRICHOPTERA		
BRACHYCENTRIDAE	7 0 0	
BRACHYCENTRUS		
HYDROPSYCHIDAE	12 8 2	
CHEUMATOPSYCHE		
HYDROPSYCHE	5 0 0	
LEPTOCERIDAE		
CERACLEA	3 0 0	
MYSTACIDES	16 0 0	
POLYCENTROPODIDAE		
NEURECLIPSIS	2 21 34	
ALL TRICHOPTERA		758
GASTROPODA		
AMNICOLA	42 2 0	
ELIMIA LIVESCENS	48 58 3	
GYRAULUS	16 0 0	
PHYSA	9 0 0	
ALL GASTROPODA		1226
PELECYPODA		
SPHAERIIDAE		
PISIDIUM	17 11 0	
SPHAERIUM	5 20 0	
ALL SPHAERIIDAE		365
ALL PELECYPODA		365

B-237

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT 7 STATION 3	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		108	13	73	1336
HYDRA					

ALL CNIDARIA					1336
RHABDOCELA		0	5	8	90
TRICLADIDA		2	0	0	14
NEMERTINEA		6	6	0	83
NEMATODA		30	15	11	386
OLIGOCHAETA					
SPIROSPERMA		2	0	2	

OTHER		3	25	6	262
ALL OLIGOCHAETA					
CLADOCERA					
DAPHNIA		3	2	2	48

ALL CLADOCERA					48
COPEPODA					
DIAPYCNUS		0	2	1	

EPISHURA LACUSTRIS		0	1	0	

ALL COPEPODA					28

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 7 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	86	8	4	

HYALELLA AZTECA	5	0	0	

ALL AMPHIPODA				709
DIPTERA				
CHIRONOMIDAE	9	2	1	83
EPHEMEROPTERA				
CAENIDAE	2	0	0	
CAENIS				

EPHEMERIDAE				
HEXAGENIA	0	1	0	

HEPTAGENIIDAE				
STENONEMA	1	0	1	

ALL EPHEMEROPTERA				34
TRICHOPTERA				
BRACHYCENTRIDAE	7	0	0	
BRACHYCENTRUS				

HYDROPSYCHIDAE	26	8	1	
CHEUMATOPSYCHE				

HYDROPSYCHE	11	0	0	

POLYCENTROPODIDAE				
NEURECLIPSIS	2	1	2	

ALL TRICHOPTERA				399
ACARINA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 7 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
ANNICOLA	2	11	0	

ELIMIA LIVESCENS	8	15	8	

VALVATA TRICARINATA	0	1	0	

ALL GASTROPODA				310
PELECYPODA				
SPHAERIIDAE	0	0	5	
PISIDIUM				

SPHAERIUM	5	5	1	

ALL SPHAERIIDAE				110
ALL PELECYPODA				110

10/12/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

ST. CLAIR RIVER	TRANSECT	STATION	GRAB COUNTS			ESTIMATED
TAXON		1	1	2	3	NO./50. METER
CNIDARIA			2	0	18	138
HYDRA						138

ALL CNIDARIA			15	8	5	193
RHABDOCELA			71	6	43	826
NEMERTINEA			122	97	57	1901
NEMATODA						
OLIGOCHAETA			0	0	1	
NAIS			244	146	52	

SPIROSPERMA			5	0	1	

STYLARIA			249	275	138	7651

OTHER						
ALL OLIGOCHAETA						
POLYCHAETA			978	952	663	17857
MANAYUNKIA SPECIOSA						17857

ALL POLYCHAETA						
CLADOCERA			0	32	0	220
ALONA						220

ALL CLADOCERA						

B-241

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 8 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA	16	0	0	
DIAPYCNUS				

EPISHURA LACUSTRIS	0	1	0	

HARPACTICOIDA	0	0	16	

MACROCYCLOPS	0	1	2	

ALL COPEPODA				248
OSTRACODA	16	0	0	110
AMPHIPODA				
GAMMARUS	66	33	35	

HYALELLA AZTECA	18	33	24	

ALL AMPHIPODA				1439
ISOPODA				
ASELLUS	3	1	0	

LIRCEUS	0	1	0	

ALL ISOPODA				34
DIPTERA				
CERATOPOGONIDAE	1	2	0	
CHIRONOMIDAE	61	10	69	
ALL DIPTERA				964 985

B-242

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 8 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	39	50	106	
EPHEMERIDAE				
HEXAGENIA	1	4	7	
HEPTAGENIIDAE				
STENONEMA	0	1	1	
ALL EPHEMEROPTERA				1439
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	0	
LEPTOCERIDAE				
DE CETIS	0	1	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	7	7	17	
ALL TRICHOPTERA				234
GASTROPODA				
AMNICOLA	0	1	0	
ELIMIA LIVESCENS	2	10	1	
GYRAULUS	0	1	0	
PHYSA	1	32	1	
ALL GASTROPODA				337
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	1	0	
SPHAERIUM	1	1	0	
ALL SPHAERIIDAE				21
ALL PELECYPODA				21

B-243

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/12/83
ST. CLAIR RIVER	TRANSECT 8	STATION 2	GRAB COUNTS			ESTIMATED
TAXON			1	2	3	NO./SQ. METER

CNIDARIA						
HYDRA			0	16	0	110

ALL CNIDARIA						110
RHABDOCOELA			20	89	3	771
TRICLADIDA			1	0	0	7
NEMERTINEA			0	1	0	7
NEMATODA			21	9	34	441
OLIGOCHAETA						
NAIS			0	1	0	

SPIROSPERMA			59	71	65	

STYLARIA			10	102	1	

OTHER			962	413	1385	21135
ALL OLIGOCHAETA						
POLYCHAETA						
MANAYUNKIA SPECIOSA			16	118	49	1260

ALL POLYCHAETA						1260
CLADOCERA						
DAPHNIA			9	0	0	62

ALL CLADOCERA						62

B-244

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/12/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
HARPACTICOIDA				
ALL COPEPODA	0	16	0	110
AMPHIPODA				
GAMMARUS	3	141	12	110
HYALELLA AZTECA	7	113	0	
ALL AMPHIPODA				1901
ISOPODA				
ASELLUS	0	1	0	
LIRCEUS	0	3	0	
ALL ISOPODA				28
DIPTERA				
CHIRONOMIDAE	216	138	185	3712
EPHEMEROPTERA				
CAENIDAE	0	2	3	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	2	6	0	
ALL EPHEMEROPTERA				90
COLEOPTERA				
ELMIDAE	0	0	1	7
TRICHOPTERA				
POLYCENTROPODIDAE				
POLYCENTROPUS	0	1	1	
ALL TRICHOPTERA				14

B-245

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/12/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
GASTROPODA				
AMNICOLA	3	67	17	
ELIMIA LIVESCENS	0	4	1	
GYRAULUS	0	25	0	
PHYSA	0	14	0	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				909
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	14	5	145
ALL PELECYPODA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
ST. CLAIR RIVER	TRANSECT	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	91	2	13		730

ALL CNIDARIA					730
RHABDOCELA	117	24	23		1129
TRICLADIDA	56	0	0		386
NEMERTINEA	24	16	1		282
NEMATODA	11	51	23		585
HIRUDINEA					
GLOSSIPHONIIDAE					
GLOSSIPHONIA COMPLANATA	1	0	0		

HELOBDELLA PAPILLATA	1	0	0		

PISCICOLIDAE	0	0	1		
ALL HIRUDINEA					21
OLIGOCHAETA					
SPIROSPERMA	90	32	54		

STYLARIA	2	1	0		

OTHER	262	332	224		
ALL OLIGOCHAETA					6866

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/12/83
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
POLYCHAETA					
MANAYUNKIA SPECIOSA	16	9	17		289
ALL POLYCHAETA					289
CLADOCERA					
DAPHNIA	9	8	0		117
ALL CLADOCERA					117
COPEPODA					
DIPTOMUS	16	0	0		
HARPACTICOIDA	0	32	8		
ALL COPEPODA					386
AMPHIPODA					
GAMMARUS	128	0	1		
HYALELLA AZTECA	0	0	2		
ALL AMPHIPODA					902
ISOPODA					
ASELLUS	19	0	0		
LIRCEUS	2	0	0		
ALL ISOPODA					145
DIPTERA					
CHIRONOMIDAE	167	209	129		3478
EPHEMEROPTERA					
CAENIDAE	9	0	0		
CAENTIS					
EPHEMERIDAE					
HEXAGENIA	84	199	196		
ALL EPHEMEROPTERA					3361

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/12/83
TRANSECT 8 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COLEOPTERA				
ELMIDAE	1	0	0	
DUBIRAPHIA				
ALL COLEOPTERA				7
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	44	18	23	
PHYSA	3	0	2	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				627
PELECYPODA				
SPHAERIIDAE	15	5	13	227
PISIDIUM	1	0	0	
UNIONIDAE				
ALL PELECYPODA				234

13-249

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/13/83
ST. CLAIR RIVER	TRANSECT 9	STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	0	1	0	7	
NEMATODA	1	0	0	7	
OLIGOCHAETA	5	4	7	110	
POLYCHAETA					
MANAYUNKIA SPECIOSA	1	0	6	48	
ALL POLYCHAETA				48	
CLADOCERA					
BOSMINA	0	1	1	14	
ALL CLADOCERA				14	
COPEPODA					
DIAPTOMUS	0	1	0		
HARPACTICOIDA	0	0	1		
ALL COPEPODA				14	
AMPHIPODA					
GAMMARUS	1	2	1	28	
ALL AMPHIPODA				28	
DIPTERA					
CERATOPOGONIDAE	1	0	1		
CHIRONOMIDAE	4	3	2	62	
ALL DIPTERA				76	

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/13/83
ST. CLAIR RIVER	TRANSECT	9	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		
FISH	0	1	0	7		
FISH EGGS				7		
ALL FISH						
CNIDARIA	8	7	1	110		
HYDRA				110		
ALL CNIDARIA						
RHABDOCELA	10	23	8	282		
TRICLADIDA	0	0	26	179		
NEWERTINEA	1	1	1	21		
NEMATODA	11	21	2	234		
OLIGOCHAETA						
NAILS	0	0	1			
SPIROSPERMA	46	154	82			
STYLARIA	69	105	75			
OTHER	178	236	89	7128		
ALL OLIGOCHAETA						
POLYCHAETA						
MANAYUNKIA SPECIOSA	142	254	222	4256		
ALL POLYCHAETA				4256		

B-251

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/13/83
TRANSECT 9 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA	3	1	2		
DAPHNIA					

SIDA CRYSTALLINA	0	0	1		

ALL CLADOCERA					48
COPEPODA					
DIAPYOMUS	1	1	0		

HARPACTICOIDA	6	4	0		

ALL COPEPODA					83
OSTRACODA	0	2	1		21
AMPHIPODA					
GAMMARUS	55	199	288		

HYALELLA AZTECA	3	3	5		

ALL AMPHIPODA					3808
ISOPODA					
AELLUS	0	0	3		

LIRCEUS	0	1	0		

ALL ISOPODA					28
DIPTERA					
CERATOPOGONIDAE	13	3	1		
CHIRONOMIDAE	117	186	75		2603
ALL DIPTERA					2720

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/13/83
TRANSECT 9 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	31	5	5		
EPHEMERIDAE					
HEXAGENIA	4	3	0		
ALL EPHEMEROPTERA					331
TRICHOPTERA					
LEPTOCERIDAE					
CERACLEA	0	1	0		
MYSTACIDES	0	4	2		
NECTOPSYCHE	1	0	0		
DECETIS	6	3	7		
SETODES	1	0	0		
ALL TRICHOPTERA					172
ACARINA	1	1	1		21
GASTROPODA					
AMNICOLA	1	33	56		
ELIMIA LIVESCENS	1	0	0		
GYRAULUS	8	12	13		
PHYSA	1	27	14		
VALVATA TRICARINATA	0	1	0		
ALL GASTROPODA					1150
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	48	53	74		
SPHAERIUM	5	0	0		
ALL SPHAERIIDAE					1240
ALL PELECYPODA					1240

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/13/83
ST. CLAIR RIVER	TRANSECT	9	STATION	3		
TAXON					GRAB COUNTS	ESTIMATED
					1 2 3	NO./SQ. METER
CNIDARIA						
HYDRA					80 15 8	709
ALL CNIDARIA						709
RHABDOCELA					27 7 24	399
TRICLADIDA					0 0 63	434
NEMERTINEA					8 3 0	76
NEMATODA					47 15 25	599
HIRUDINEA						
ERPOBDELLIDAE					0 0 1	
GLOSSIPHONIIDAE					0 0 3	
GLOSSIPHONIA METEROCLITA						
HELOBDELLA TRISERIALIS					0 0 1	
ALL HIRUDINEA						34
OLIGOCHAETA						
SPIROSPERMA					86 31 0	
STYLARIA					115 35 123	
OTHER					286 215 393	
ALL OLIGOCHAETA						8842

B-254

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/13/83
TRANSECT 9 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	44	47	0	627
ALL POLYCHAETA				627
CLADOCERA				
DAPHNIA	9	5	0	
ILYOCRYPTUS	0	0	1	
ALL CLADOCERA				103
COPEPODA				
CYCLOPOIDIDAE	0	1	0	
DIAPTOMUS	0	1	0	
HARPACTICOIDA	40	44	8	
ALL COPEPODA				647
OSTRACODA	10	1	2	90
AMPHIPODA				
GAMMARUS	32	28	76	
HYALELLA AZTECA	2	1	285	
ALL AMPHIPODA				2920
ISOPODA				
LIRCEUS	2	0	0	14
ALL ISOPODA				14
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	400	161	350	6274
ALL DIPTERA				6281

B-255

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/13/83
TRANSECT 9 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	12	1	2		

EPHEMERIDAE					
HEXAGENIA	76	6	0		

ALL EPHEMEROPTERA					668
TRICHOPTERA					
HYDROPTILIDAE					
HYDROPTILA	1	0	0		

LEPTOCERIDAE					
MYSTACIDES	1	0	0		

OECETIS	0	1	0		

TRIAENODES	1	0	0		

ALL TRICHOPTERA					28
ODONATA					
COENAGRIONIDAE	1	0	0		7
ACARINA	1	3	1		34
GASTROPODA					
AMNICOLA	54	27	21		

ELIMIA LIVESCENS	1	1	0		

GYRAULUS	0	1	2		

PHYSA	5	0	23		

VALVATA TRICARINATA	3	1	0		

ALL GASTROPODA					957
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	11	21	0		220

ALL PELECYPODA					220

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/13/83
ST. CLAIR RIVER	TRANSECT 10 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
RHABDOCOELA	0	1	1	14
NEMERTINEA	0	0	1	7
NEMATODA	0	0	3	21
OLIGOCHAETA	59	52	60	1178
CLADOCERA	0	2	0	14
DAPHNIA				
ALL CLADOCERA				14
COPEPODA	0	0	1	7
HARPACTICOIDA				
ALL COPEPODA				7
AMPHIPODA	0	1	0	7
GAMMARUS				
ALL AMPHIPODA				7
DIPTERA	8	2	6	
CERATOPOGONIDAE	9	13	27	337
CHIRONOMIDAE				448
ALL DIPTERA				

B-257

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/13/83
TRANSECT 10 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	0	

EPHEMERIDAE				
HEXAGENIA	2	0	1	

ALL EPHEMEROPTERA				28
GASTROPODA				
ELIMIA LIVESCENS	1	2	0	21

ALL GASTROPODA				21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	0	0	21

ALL PELECYPODA				21

B-258

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/13/83
ST. CLAIR RIVER		TRANSECT 10 STATION 2		GRAB COUNTS		ESTIMATED
TAXON		1	2	3	NO./SQ. METER	

CNIDARIA						
HYDRA						

ALL CNIDARIA		0	2	0		14

RHABDOCOELA						
TRICLADIDA		0	3	0		21

NEMATODA						
OLIGOCHAETA		0	1	0		7
NAIS						

STYLARIA		0	5	0		34

OTHER						
ALL OLIGOCHAETA		70	200	28		2100

POLYCHAETA						
MANAYUNKIA SPECIES A		0	5	4		62

ALL POLYCHAETA						62

CLADOCERA						
DAPHNIA		2	1	0		21

ALL CLADOCERA						21

AMPHIPODA						
GAMMARUS		0	7	1		55

ALL AMPHIPODA						55

B-259

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/13/83
TRANSECT 10 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CERATOPOGONIDAE	4	13	6		
CHIRONOMIDAE	4	167	2		1191
ALL DIPTERA					1350
Ephemeroptera					
CAENIDAE					
CAENIS	0	12	0		

EPHEMERIDAE					
HEXAGENIA	0	2	0		

BAETISCIDAE					
BAETISCA	0	1	0		

ALL EPHEMEROPTERA					103
ACARINA					
	0	3	1		28
GASTROPODA					
ELIMIA LIVESCENS	2	0	0		14

ALL GASTROPODA					14
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	2	0	1		21

ALL PELECYPODA					21

10/13/83

ST. CLAIR RIVER
TRANSECT 10 STATION 3

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CNIDARIA				
HYDRA				

ALL CNIDARIA	8	11	0	131
				131
RHABDOCOELA	8	28	2	262
TRICLADIDA	0	18	0	124
NEMERTINEA	0	15	1	110
NEMATODA	9	11	28	331
OLIGOCHAETA				
NAIS	8	0	0	

SPIROSPERMA	1	32	25	

STYLARIA	0	47	6	

OTHER	69	307	144	4401
ALL OLIGOCHAETA				
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	18	0	124

ALL POLYCHAETA				124
CLADOCERA				
DAPHNIA	1	10	1	

SIDA CRYSTALLINA	0	1	0	

ALL CLADOCERA				90

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/13/83
TRANSECT 10 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
EPISHURA LACUSTRIS	0	0	1		
HARPACTICOIDA	0	0	32		
LIMNOCALANUS	0	0	1		
ALL COPEPODA				234	
OSTRACODA	0	1	0	7	
AMPHIPODA					
GAMMARUS	0	25	0		
HYALELLA AZTECA	0	1	0		
PONTOPOREIA HOYI	0	3	0		
ALL AMPHIPODA				200	
DIPTERA					
CHIRONOMIDAE	168	420	119	4869	
EPHEMEROPTERA					
CAENIDAE	0	8	0		
CAENIS					
EPHEMERIDAE					
HEXAGENIA	11	65	20		
ALL EPHEMEROPTERA				716	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/13/83
TRANSECT 10 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPSYCHIDAE					
HYDROPSYCHE	1	0	0		
HYDROPTILIDAE					
HYDROPTILA	0	2	0		
LEPTOCERIDAE					
DECEIS	0	0	1		
POLYCENTROPIDAE					
POLYCENTROPUS	0	1	0		
ALL TRICHOPTERA					34
ACARINA					
	0	4	0		28
GASTROPODA					
AMNICOLA	4	36	4		
ELIMIA LIVESCENS	1	3	0		
GYRAULUS	0	9	0		
PHYSA	0	6	0		
VALVATA TRICARINATA	0	1	0		
ALL GASTROPODA					441
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	1	9	2		83
UNIONIDAE	0	1	0		
ALL PELECYPODA					90

MACROZOEBENTHOS PONAR GRAB COUNT DATA					10/17/83
LAKE ST. CLAIR	TRANSECT 11 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		0	1	1	14

ALL CNIDARIA					14
RHABDOCOELA		4	3	1	55
NEMERTINEA		0	0	1	7
NEMATODA		26	28	50	716
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOSDELLA STAGNALIS		0	0	1	

ALL HIRUDINEA					7
OLIGOCHAETA					
NAIS		1	0	0	

SPIROSPERMA		7	58	8	

OTHER		53	78	52	
ALL OLIGOCHAETA					1770
POLYCHAETA					
MANAYUNKIA SPECIOSA		60	0	170	1584

ALL POLYCHAETA					1584
CLADOCERA					
SIDA CRYSTALLINA		0	0	1	7

ALL CLADOCERA					7

B-264

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 11 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	72	63	117	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				1749
OSTRACODA	14	17	21	358
AMPHIPODA				
GAMMARUS	97	64	114	1894
ALL AMPHIPODA				1894
DIPTERA				
CHIRONOMIDAE	28	31	30	613
EPHEMEROPTERA				
EPHEMERIDAE	100	116	99	
HEXAGENIA				
ALL EPHEMEROPTERA				2169
TRICHOPTERA				
LEPTOCERIDAE	7	12	7	
OECETIS				
ALL TRICHOPTERA				178
ACARINA	1	1	1	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 11 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	9	2	1	
BITHYNIA	1	0	0	
ELIMIA LIVESCENS	0	0	1	
GYRAULUS	6	2	2	
PLEUROCERA ACUTA	2	0	0	
VALVATA TRICARINATA	4	5	1	
ALL GASTROPODA				248
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	11	10	5	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				186
ALL PELECYPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/17/83
LAKE ST. CLAIR	TRANSECT 11	STATION 2	GRAB COUNTS			ESTIMATED
TAXON			1	2	3	NO./SQ. METER
RHABDOCOELA			2	3	0	34
NEMATODA			135	139	149	2913
HIRUDINEA						
GLOSSIPHONIIDAE						
HELOBDELLA ELONGATA			0	2	0	
HELOBDELLA STAGNALIS			0	0	1	
ALL HIRUDINEA						21
OLIGOCHAETA						
NAIS			0	1	0	
SPIROSPERMA			0	1	0	
OTHER						
ALL OLIGOCHAETA			344	456	322	7741
POLYCHAETA						
MANAYUNKIA SPECIOSA			33	83	60	1212
ALL POLYCHAETA						1212
CLADOCERA						
DAPHNIA			1	0	0	7
ALL CLADOCERA						7
COPEPODA						
DIATOMUS			0	0	1	
HARPACTICOIDA			5	6	30	
MACROCYCLOPS			3	5	3	
ALL COPEPODA						365

B-267

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
TRANSECT 11 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	1	2	8	76	
AMPHIPODA					
GAMMARUS	17	10	11	262	

ALL AMPHIPODA				262	
DIPTERA					
CHIRONOMIDAE	18	47	27	634	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	43	42	29		

ALL EPHEMEROPTERA				785	
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	2	1	0		21

ALL TRICHOPTERA					34
ACARINA	3	1	1		
GASTROPODA					
ANNICOLA	1	0	1		

ELIMIA LIVESCENS	1	1	0		

VALVATA TRICARINATA	0	1	0		

ALL GASTROPODA					34
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	93	62	30		

SPHAERIUM	1	5	3		

ALL SPHAERIIDAE					1336
ALL PELECYPODA					1336

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
LAKE ST. CLAIR	TRANSECT 11	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	1	0	0		7
ALL CNIDARIA					7
RHABDOCOELA	1	4	0		34
TRICLADIDA	0	0	1		7
NEMATODA	208	193	173		3953
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	3	1	3		48
ALL HIRUDINEA					
OLIGOCHAETA					
SPIROSPERMA	21	0	15		
OTHER	1123	1123	731		20750
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	23	57	42		840
ALL POLYCHAETA					840
CLADOCERA					
DAPHNIA	2	1	0		
ILYOCRYPTUS	0	0	2		
ALL CLADOCERA					34

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/83

TRANSECT 11 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
DIAPYCNUS	1	1	1	
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	27	10	10	
MACROCYCLOPS	12	6	4	
ALL COPEPODA				503
OSTRACODA	2	0	0	14
AMPHIPODA				
GAMMARUS	19	41	10	482
ALL AMPHIPODA				482
DIPTERA				
CHIRONOMIDAE	37	25	39	696
EPHEMEROPTERA				
EPHEMERIDAE	46	29	47	
HEXAGENIA				
ALL EPHEMEROPTERA				840
TRICHOPTERA				
LEPTOCERIDAE	0	0	1	
GEOMETRIDAE				
ALL TRICHOPTERA				7
ACARINA	0	1	0	7
PELECYPODA				
SPHAERIIDAE	67	128	78	
PISIDIUM				
SPHAERIUM	0	0	5	
ALL SPHAERIIDAE				1914
ALL PELECYPODA				1914

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
LAKE ST. CLAIR	TRANSECT 12 STATION 1			
TAXON		GRAB COUNTS		
		1	2	3
		ESTIMATED		
		NO./SQ. METER		
TRICLADIDA		0	1	0
		7		
NEMATODA		18	15	16
		337		
OLIGOCHAETA				
SPIROSPERMA		2	3	3
STYLARIA		1	0	1
OTHER				
ALL OLIGOCHAETA		22	24	19
		516		
POLYCHAETA				
MANAYUNKIA SPECIOSA		22	15	27
ALL POLYCHAETA		441		
CLADOCERA				
DAPHNIA		0	1	0
ILYOCRYPTUS		1	0	0
ALL CLADOCERA		14		
COPEPODA				
CYCLOPOIDIDAE		1	1	0
DIAPTOMUS		0	1	1
HARPACTICOIDA		25	19	15
ALL COPEPODA		434		
OSTRACODA		10	4	10
		165		

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
TRANSECT 12 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	32	14	24	482	
ALL AMPHIPODA				482	
DIPTERA					
CHIRONOMIDAE	35	24	29	606	
EPHEMEROPTERA					
EPHEMERIDAE	126	129	148		
HEXAGENIA					
ALL EPHEMEROPTERA				2775	
TRICHOPTERA					
LEPTOCERIDAE	7	3	4		
OECETIS					
ALL TRICHOPTERA				96	
ACARINA	1	0	0	7	
GASTROPODA					
AMNICOLA	4	4	2		
ELIMIA LIVESCENS	0	0	1		
GYRAULUS	5	3	3		
VALVATA TRICARINATA	0	1	0		
ALL GASTROPODA				158	
PELECYPODA					
SPHAERIIDAE	14	22	14		
PISIDIUM					
SPHAERIUM	1	0	0		
ALL SPHAERIIDAE				351	
ALL PELECYPODA				351	

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/17/83
LAKE ST. CLAIR		TRANSECT 12		STATION 2		
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		
RHABDOCOELA	5	1	0	41		
TRICLADIDA	1	0	1	14		
NEMATODA	54	24	15	640		
HIRUDINEA						
GLOSSIPHONIIDAE						
HELOBDELLA ELONGATA	0	1	0	7		
ALL HIRUDINEA						
OLIGOCHAETA						
SPIROSPERMA	1	1	0			
OTHER	171	159	99	2968		
ALL OLIGOCHAETA						
POLYCHAETA						
MANAYUNKIA SPECIOSA	13	4	5	152		
ALL POLYCHAETA				152		
CLADOCERA						
DAPHNIA	1	0	0	7		
ALL CLADOCERA				7		

B-273

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 12 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	3	0	1	
DIAPTOMUS	3	0	0	
EPISHURA LACUSTRIS	2	1	0	
HARPACTICOIDA	16	5	4	
LIMNOCALANUS	0	1	0	
MACROCYCLOPS	4	2	0	
MESOCYCLOPS	3	0	0	
ALL COPEPODA				310
OSTRACODA	16	4	0	138
AMPHIPODA				
GAMMARUS	524	20	6	3788
ALL AMPHIPODA				3788
DIPTERA				
CHIRONOMIDAE	50	32	24	730
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	122	117	92	
ALL EPHEMEROPTERA				2279
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	3	2	
ALL TRICHOPTERA				55
ACARINA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
TRANSECT 12 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	0	1	0		

GYRAULUS	5	0	0		

ALL GASTROPODA				41	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	33	34	26		

SPHAERIUM	2	0	2		

ALL SPHAERIIDAE				668	
ALL PELECYPODA				668	

B-275

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
LAKE ST. CLAIR		TRANSECT 12 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
TRICLADIDA		0	0	1	7
NEMATODA		15	9	15	269
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA		2	0	1	
ALL HIRUDINEA					21
OLIGOCHAETA					
SPIROSPERMA		0	0	2	
OTHER					
ALL OLIGOCHAETA		130	187	301	4270
POLYCHAETA					
MANAYUNKIA SPECIOSA		24	53	107	1267
ALL POLYCHAETA					1267
CLADOCERA					
BOSMINA		0	0	1	
DAPHNIA		0	3	1	
ALL CLADOCERA					34
COPEPODA					
DIAPTOMUS		0	0	4	
HARPACTICOIDA		0	3	9	
MACROCYCLOPS		0	1	1	
ALL COPEPODA					124
OSTRACODA		1	1	1	21

B-276

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
TRANSECT 12 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	15	9	11	241	
ALL AMPHIPODA				241	
DIPTERA					
CHIRONOMIDAE	18	24	38	551	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	87	70	79		
ALL EPHEMEROPTERA				1625	
TRICHOPTERA					
LEPTOCERIDAE					
DE CETIS	2	1	0		
ALL TRICHOPTERA				21	
ACARINA					
	1	0	2	21	
GASTROPODA					
AMNICOLA	1	2	3		
GYRAULUS	0	1	0		
ALL GASTROPODA				48	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	14	5	44		
SPHAERIUM	1	1	0		
ALL SPHAERIIDAE				448	
ALL PELECYPODA				448	

13-277

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/83

LAKE ST. CLAIR TRANSECT 13 STATION 1

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
RHABDOCOELA	2	0	14	110
NEMATODA	17	26	28	489
OLIGOCHAETA				
NAIS	0	1	10	

SPIROPERMA	2	1	0	

OTHER	6	4	0	
ALL OLIGOCHAETA				165
POLYCHAETA				
MANAYUNKIA SPECIOSA	18	27	17	427

ALL POLYCHAETA				427
COPEPODA				
HARPACTICOIDA	1	5	49	379

ALL COPEPODA				379
OSTRACODA	1	3	5	62
AMPHIPODA				
GAMMARUS	88	73	72	1605

ALL AMPHIPODA				1605
DIPTERA				
CHIRONOMIDAE	14	40	27	558

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
TRANSECT 13 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA					

ALL EPHEMEROPTERA	56	158	120		2300
TRICHOPTERA					
LEPTOCERIDAE					
DECETIS	1	3	10		

ALL TRICHOPTERA					96
ACARINA	0	0	1		7
GASTROPODA					
AMNICOLA	11	4	9		

ELIMIA LIVESCENS	1	2	3		

GYRAULUS	9	7	14		

VALVATA TRICARINATA	4	4	6		

ALL GASTROPODA					510
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	7	9	6		

SPHAERIUM	2	8	3		

ALL SPHAERIIDAE					241
UNIONIDAE	1	0	0		
ALL PELECYPODA					248

B-279

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/17/83
LAKE ST. CLAIR		TRANSECT 13 STATION 2				
TAXON		GRAB COUNTS			ESTIMATED	
		1	2	3	NO./SQ. METER	
RHABDOCOELA		1	0	1	14	
NEMATODA		25	42	10	530	
OLIGOCHAETA		160	152	60	2562	
POLYCHAETA						
MANAYUNKIA SPECIOSA		4	14	8	179	
ALL POLYCHAETA					179	
CLADOCERA						
BOSMINA		0	1	0	7	
ALL CLADOCERA					7	
COPEPODA						
DIATOMUS		0	1	0		
HARPACTICOIDA		14	34	1		
MACROCYCLOPS		0	2	1		
ALL COPEPODA					365	
OSTRACODA						
		3	16	0	131	
AMPHIPODA						
GAMMARUS		20	49	19	606	
ALL AMPHIPODA					606	

B-280

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 13 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./50. METER
DIPTERA				
CHIRONOMIDAE	40	42	34	799
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	92	100	90	

ALL EPHEMEROPTERA				1942
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	2	2	

ALL TRICHOPTERA				34
ACARINA				
	1	0	1	14
GASTROPODA				
AMNICOLA	3	3	2	

GYRAULUS	0	1	1	

ALL GASTROPODA				69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	44	16	

SPHAERIUM	3	5	2	

ALL SPHAERIIDAE				654
ALL PELECYPODA				654

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
LAKE ST. CLAIR	TRANSECT 13 STATION 3				
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA					
SPONGILLA	0	9	0	+	
ALL PORIFERA				0	
NEMATODA	12	23	19	372	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS	1	0	0		
ALL HIRUDINEA				7	
OLIGOCHAETA					
SPIROSPERMA	2	1	0		
OTHER	147	164	103	2872	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	14	28	17	413	
ALL POLYCHAETA				413	
CLADOCERA					
BOSMINA	1	0	0		
DAPHNIA	1	0	0		
ALL CLADOCERA				14	
COPEPODA					
EPISHURA LACUSTRIS	2	0	0		
HARPACTICOIDA	2	4	0		
MACROCYCLOPS	0	0	2		
ALL COPEPODA				69	
OSTRACODA	2	2	3	48	

B-282

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 13 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	9	13	20	289
ALL AMPHIPODA				289
DIPTERA				
CHIRONOMIDAE	28	52	32	771
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	83	111	107	
ALL EPHEMEROPTERA				2073
TRICHOPTERA				
LEPTOCERIDAE	3	1	3	
DECTIS				48
ALL TRICHOPTERA				21
ACARINA	1	1	1	
GASTROPODA				
AMNICOLA	0	1	3	
GYRAULUS	1	1	2	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				62
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	28	73	19	
SPHAERIUM	0	2	2	
ALL SPHAERIIDAE				854
ALL PELECYPODA				854

B-283

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
DETROIT RIVER		TRANSECT 14 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	19	8	0		186
ALL CNIDARIA					186
RHABDOCOELA	27	15	7		337
NEMERTINEA	25	2	7		234
NEMATODA	2	1	0		21
OLIGOCHAETA					
SPIROSPERMA	0	1	0		
OTHER					
ALL OLIGOCHAETA	13	5	20		269
POLYCHAETA					
MANAYUNKIA SPECIOSA	2	0	0		14
ALL POLYCHAETA					14
CLADOCERA					
BOSMINA	0	1	0		7
ALL CLADOCERA					7
AMPHIPODA					
GAMMARUS	4	0	0		
HYALELLA AZTECA	8	4	0		
ALL AMPHIPODA					110

B-284

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 14 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./50. METER
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	83	25	1	751
ALL DIPTERA				758
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	2	0	0	
ALL EPHEMEROPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	25	11	0	
HYDROPSYCHE	40	28	4	
ALL TRICHOPTERA				744
ACARINA	6	2	1	62
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	32	16	30	
FERISSIA	5	4	0	
GYRAULUS	4	5	0	
PHYSA	4	12	0	
ALL GASTROPODA				778
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	44	25	13	
SPHAERIUM	4	9	2	
ALL SPHAERIIDAE				668
UNIONIDAE	1	0	1	
ALL PELECYPODA				682

B-285

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
DETROIT RIVER		TRANSECT 14 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER	
	1	2	3		
CNIDARIA					
HYDRA	1	0	0	7	

ALL CNIDARIA				7	
TRICLADIDA	4	3	6	90	
NEMERTINEA	11	4	5	138	
NEMATODA	0	4	3	48	
OLIGOCHAETA	20	19	14	365	
POLYCHAETA					
MANAYUNKIA SPECIOSA	1	2	0	21	

ALL POLYCHAETA				21	
COPEPODA					
DIAPYCNUS	0	0	1	7	

ALL COPEPODA				7	
DIPTERA					
CHIRONOMIDAE	1	2	0	21	
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	4	0	0		

ALL EPHEMEROPTERA				28	

B-286

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/17/83
TRANSECT 14 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
ACARINA	1	1	1	21
GASTROPODA				
ANNICOLA	2	0	2	
ELIMIA LIVESCENS	12	3	3	
GYRAULUS	0	1	0	
PHYSA	1	0	0	
ALL GASTROPODA				165
PELECYPODA				
SPHAERIIDAE	17	2	7	
PISIDIUM				
SPHAERIUM	1	0	3	
ALL SPHAERIIDAE				207
ALL PELECYPODA				207

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/83
DETROIT RIVER		TRANSECT 14 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER	
	1	2	3		
CNIDARIA					
HYDRA					

ALL CNIDARIA					7
RHABDOCOELA					7
TRICLADIDA					7
NEMERTINEA					138
NEMATODA					28
OLIGOCHAETA					
BRANCHIURA					

NAIS					

SPIROSPERMA					

OTHER					
ALL OLIGOCHAETA					1350
POLYCHAETA					
MANAYUNKIA SPECIOSA					55

ALL POLYCHAETA					55
AMPHIPODA					
GAMMARUS					7

ALL AMPHIPODA					7

B-288

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/83

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CHIRONOMIDAE	8	7	3	124
TRICHOPTERA				
HYDROPSYCHIDAE	0	2	0	
CHEUMATOPSYCHE				
ALL TRICHOPTERA				14
ACARINA	0	0	2	14
GASTROPODA				
AMNICOLA	1	0	1	
ELIMIA LIVESCENS	8	10	11	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE	10	8	10	
PISIDIUM	3	1	1	
SPHAERIUM				
ALL SPHAERIIDAE				227
UNIONIDAE	0	1	0	
ELLIPTIO DILATATUS				
ALL PELECYPODA				234

13-289

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 15 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	8	26	81		792
ALL CNIDARIA					792
RHABDOCOELA	12	0	0		83
TRICLADIDA	24	48	47		820
NEMERTINEA	12	73	21		730
NEMATODA	15	8	4		186
OLIGOCHAETA					
SPIROSPERMA	49	19	28		
STYLARIA	1	0	0		
OTHER	14	1	18		902
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	23	17	11		351
ALL POLYCHAETA					351
OSTRACODA	0	0	1		7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
TRANSECT 15 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	14	22	35		
PONTOPOREIA HOYI	0	0	1		
ALL AMPHIPODA					496
DIPTERA					
CHIRONOMIDAE	287	256	575		7699
EPHEMEROPTERA					
CAENIDAE					
CAENIS	7	0	4		
EPHEMERIDAE					
HEXAGENIA	2	0	1		
EPHEMERELLIDAE					
EPHEMERELLA	0	4	0		
BAETISCIDAE					
BAETISCA	4	1	2		
ALL EPHEMEROPTERA					172
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	1	0	0		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	110	106	95		
HYDROPSYCHE	88	85	69		
LEPTOCERIDAE					
GERACLEA	0	1	1		
DECETIS	1	3	2		
SETODES	0	2	0		
ALL TRICHOPTERA					3884
ACARINA	1	0	2		21

10/18/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
GASTROPODA				
AMNICOLA	25	23	16	
BITHYNIA	1	0	0	
ELIMIA LIVESCENS	60	54	41	
GYRAULUS	4	4	1	
PHYSA	0	1	0	
ALL GASTROPODA				1584
PELECYPODA				
SPHAERIIDAE	69	54	36	
PISIDIUM	4	16	1	
SPHAERIUM				
ALL SPHAERIIDAE				1240
UNIONIDAE	0	1	0	
LAMPISILIS VENTRICOSA	1	0	0	
OTHER				
ALL PELECYPODA				1253

B-292

MACROZOOBENTHOS PONAR GRAB COUNT DATA		10/18/83	
DETROIT RIVER	TRANSECT 15 STATION 2		
TAXON		GRAB COUNTS	ESTIMATED
		1 2 3	NO./SQ. METER
CNIDARIA			
HYDRA		0 14 16	207

ALL CNIDARIA			207
RHABDOCELA		4 0 2	41
NEMERTINEA		4 9 5	124
NEMATODA		47 50 46	985
OLIGOCHAETA			
SPIROSPERMA		0 1 0	

OTHER		5 6 5	
ALL OLIGOCHAETA			117
POLYCHAETA			
MANAYUNKIA SPECIOSA		0 15 4	131

ALL POLYCHAETA			131
COPEPODA			
HARPACTICOIDA		0 0 1	7

ALL COPEPODA			7
OSTRACODA		0 0 4	28

B-293

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
TRANSECT 15 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	12	15	8		
AMETROPIDAE					
TRICHOPTERIDAE	1	0	0		
ALL EPHEMEROPTERA					248
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	173	290	381		
HYDROPSYCHE	3	18	9		
ALL TRICHOPTERA					6019
GASTROPODA					
AMNICOLA	2	1	0		
ELIMIA LIVESCENS	28	32	38		
ALL GASTROPODA					696
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	47	20	30		
SPHAERIUM	5	4	1		
ALL SPHAERIIDAE					737
UNIONIDAE	4	0	1		
ALL PELECYPODA					771

B-294

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 15 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	8	1	1		69

ALL CNIDARIA					69
NEMERTINEA	36	19	19		510
NEMATODA	48	36	52		943
OLIGOCHAETA					
SPIROSPERMA	5	4	6		

OTHER	19	13	41		
ALL OLIGOCHAETA					606
POLYCHAETA					
MANAYUNKIA SPECIOSA	6	18	60		578

ALL POLYCHAETA					578
DIPTERA					
CHIRONOMIDAE	1	4	4		62
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	2	3	5		

ALL EPHEMEROPTERA					69
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	110	0	12		

HYDROPSYCHE	5	0	0		

ALL TRICHOPTERA					875

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/18/83
TRANSECT 15 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
GASTROPODA				
ELIMIA LIVESCENS	4	0	0	28

ALL GASTROPODA				28
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	14	18	20	358

UNIONIDAE	1	0	1	
ALL PELECYPODA				372

B-296

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/18/83
DETROIT RIVER		TRANSECT 16 STATION 1		
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CNIDARIA	3	33	0	248
HYDRA				

ALL CNIDARIA				248
RHABDOCOELA	96	6	67	1164
TRICLADIDA	0	1	47	331
NEMERTINEA	1	0	0	7
NEMATODA	94	9	35	950
HIRUDINEA				
ERPODELLIDAE	1	0	0	
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	2	0	2	

HELOBDELLA ELONGATA	2	0	0	

HELOBDELLA STAGNALIS	2	0	0	

HELOBDELLA TRISERIALIS	6	0	0	

PISCICOLIDAE				
PISCICOLA	0	1	0	

ALL HIRUDINEA				110

B-297

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/18/83

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OLIGOCHAETA				
NAIS	0	0	6	

SPIROPERMA	2	23	1	

STYLARIA	133	13	168	

OTHER	286	161	174	6728
ALL OLIGOCHAETA				
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7

ALL POLYCHAETA				7
CLADOCERA				
DAPHNIA	0	3	0	

SIDA CRYSTALLINA	2	0	0	

ALL CLADOCERA				34
OSTRACODA	3	0	0	21
AMPHIPODA				
GAMMARUS	41	8	101	

HYALELLA AZTECA	99	1	91	

ALL AMPHIPODA				2348
ISOPODA				
ASELLUS	3	0	11	96

ALL ISOPODA				96
DIPTERA				
CERATOPOGONIDAE	7	1	4	
CHIRONOMIDAE	365	254	436	7265
ALL DIPTERA				7348

B-298

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
TRANSECT 16 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	7	3	12		
EPHEMERIDAE					
HEXAGENIA	0	91	0		
ALL EPHEMEROPTERA					778
TRICHOPTERA					
HYDROPSYCHIDAE	0	2	0		
CHEUMATOPSYCHE					
LEPTOCERIDAE					
OECETIS	0	2	16		
ALL TRICHOPTERA					138
ACARINA					
	0	6	2		55
GASTROPODA					
AMNICOLA	12	34	19		
FERISSIA	0	0	1		
GYRAULUS	2	0	4		
PHYSA	22	3	5		
PLEUROCERA ACUTA	0	0	1		
VALVATA TRICARINATA	0	1	0		
ALL GASTROPODA					716
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	0	29	0		200
UNIONIDAE	0	1	0		
ALL PELECYPODA					207

B-299

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 16 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	8	1	162		1178

ALL CNIDARIA					1178
RHABDOCOELA	26	4	88		813
NEMERTINEA	15	0	42		393
TREMATODA	1	0	0		7
NEMATODA	125	47	19		1315
HIRUDINEA					
ERPOBDELLIDAE					
ERPOBDELLA PUNCTATA	0	0	4		

OTHER	0	0	1		
GLOSSIPHONIIDAE					
HELOBDELLA TRISERIALIS	2	0	0		

ALL HIRUDINEA					48
OLIGOCHAETA					
SPIROSPERMA	3	0	60		

STYLARIA	2	12	5		

OTHER	167	199	36		
ALL OLIGOCHAETA					3333

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/18/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	4	0	34
ALL POLYCHAETA				34
CLADOCERA				
ALONA	0	0	16	
BOSMINA	0	0	1	
DAPHNIA	0	1	11	
SIDA CRYSTALLINA	0	1	0	
ALL CLADOCERA				207
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	2	
DIATOMUS	0	0	2	
HARPACTICOIDA	32	37	1	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				516
OSTRACODA	17	8	1	179
AMPHIPODA				
GAMMARUS	6	8	461	
HYALELLA AZTECA	13	6	11	
ALL AMPHIPODA				3478

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/18/83
TRANSECT 16 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	1	5	0	
CHIRONOMIDAE	70	68	43	1246
EMBIIDAE	1	0	0	
ALL DIPTERA				1295
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	8	0	

EPHEMERIDAE				
HEXAGENIA	11	1	3	

EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	

ALL EPHEMEROPTERA				213
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	3	

LEPTOCERIDAE				
MYSTACIDES	0	0	1	

POLYCENTROPODIDAE				
POLYCENTROPUS	2	0	0	

ALL TRICHOPTERA				41
ACARINA	6	0	0	41

MACROZOBENTHOS PONAR GRAB COUNT DATA

10/18/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
GASTROPODA				
AMNICOLA	16	4	222	
ELIMIA LIVESCENS	2	1	32	
GYRAULUS	25	5	64	
LYMNAEA	0	0	7	
PHYSA	8	0	26	
PLEUROCERA ACUTA	2	1	1	
VALVATA TRICARINATA	0	0	116	
ALL GASTROPODA				3664
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	0	71	558
ALL PELECYPODA				558

B-303

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 16 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	4	0	0	28	
ALL CNIDARIA				28	
RHABDOCOELA	0	0	1	7	
NEMERTINEA	25	18	45	606	
NEMATODA	7	16	26	337	
OLIGOCHAETA					
SPIROSPERMA	1	0	3		
STYLARIA	0	1	0		
OTHER					
ALL OLIGOCHAETA	203	93	329	4339	
POLYCHAETA					
MANAYUNKIA SPECIOSA	32	24	17	503	
ALL POLYCHAETA				503	
COPEPODA					
DIAPYCNUS	4	0	0	28	
ALL COPEPODA				28	
AMPHIPODA					
GAMMARUS	0	0	2	14	
ALL AMPHIPODA				14	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
TRANSECT 16 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	11	24	40	516	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	0	8		

BAETIDAE					
BAETIS	1	0	2		

ALL EPHEMEROPTERA				76	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	0	11		

ALL TRICHOPTERA				83	
ACARINA	0	0	9	62	
GASTROPODA					
ANNICOLA	6	2	4		

ELIMIA LIVESCENS	1	0	1		

PLEUROCERA ACUTA	2	1	0		

ALL GASTROPODA				117	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	2	8	0		

SPHAERIUM	0	1	0		

ALL SPHAERIIDAE				83	
ALL PELECYPODA				83	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 17 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCELA	4	1	3	55	
TRICLADIDA	4	2	4	69	
NEMERTINEA	0	59	89	1019	
NEMATODA	82	174	278	3677	
HIRUDINEA					
ERPOBDELLIDAE	3	1	3		
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	0	1	0		
HELOBDELLA STAGNALIS	1	0	0		
ALL HIRUDINEA				62	
OLIGOCHAETA					
SPIROSPERMA	8	11	21		
STYLARIA	16	0	1		
OTHER	256	136	202	4483	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	0	8	55	
ALL POLYCHAETA				55	

MACROZOBENTHOS PONAR GRAB COUNT DATA

10/18/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA	192	161	87	3030
HARPACTICOIDA				3030
ALL COPEPODA				
AMPHIPODA				
GAMMARUS	1	3	6	

HYALELLA AZTECA	5	1	0	

ALL AMPHIPODA				110
ISOPODA				
ASELLUS	0	1	0	

LIRCEUS	4	8	5	

ALL ISOPODA				124
DIPTERA				
CERATOPOGONIDAE	1	0	8	
CHIRONOMIDAE	98	45	40	1260
ALL DIPTERA				1322
EPHEMEROPTERA				
EPHEMERIDAE	4	0	4	
HEXAGENIA				

ALL EPHEMEROPTERA				55
TRICHOPTERA				
POLYCENTROPODIDAE	3	0	1	
PHYCOCENTROPUS				

ALL TRICHOPTERA				28
ACARINA	4	1	0	34

B-307

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/18/83
TRANSECT 17 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	7	9	23	
ELIMIA LIVESCENS	1	1	0	
FERISSIA	0	2	0	
GYRAULUS	0	0	3	
PHYSA	0	0	1	
PLEUROCERA ACUTA	0	2	1	
VALVATA TRICARINATA	1	0	0	
OTHER	1	0	0	358
ALL GASTROPODA				
PELECYPODA				
SPHAERIIDAE	18	9	23	344
PISIDIUM				
UNIONIDAE	1	0	1	358
ALL PELECYPODA				

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 17 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	-----	-----	-----	-----	
CNIDARIA					
HYDRA	9	2	2		90

ALL CNIDARIA					90
TRICLADIDA	2	0	0		14
NEMERTINEA	39	48	49		937
NEMATODA	66	17	31		785
OLIGOCHAETA					
SPIROSPERMA	35	36	16		

STYLARIA	0	1	0		

OTHER					
ALL OLIGOCHAETA	51	76	31		1694
POLYCHAETA					
MANAYUNKIA SPECIOSA	830	1030	671		17430

ALL POLYCHAETA					17430
CLADOCERA					
DAPHNIA	8	0	1		62

ALL CLADOCERA					62
COPEPODA					
DIAPYCNUS	0	16	0		

HARPACTICOIDA	0	0	9		

ALL COPEPODA					172

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
TRANSECT 17 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	25	0	2	186	
AMPHIPODA					
GAMMARUS	0	1	0	7	
ALL AMPHIPODA				7	
DIPTERA					
CHIRONOMIDAE	20	12	4	248	
EPHEMEROPTERA					
BAETISCIDAE	7	5	13		
BAETISCA					
ALL EPHEMEROPTERA				172	
TRICHOPTERA					
HYDROPSYCHIDAE	8	90	26		
CHEMATOPSYCHE	0	3	0		
HYDROPSYCHE	0	0	1		
LEPTOCERIDAE	0	0	0		
CERACLEA					
ALL TRICHOPTERA				881	
ACARINA	0	4	0	28	
GASTROPODA					
AMNICOLA	25	8	28		
ELIMIA LIVESCENS	21	25	2		
HELISOMA	1	0	0		
PLEUROCERA ACUTA	1	3	1		
ALL GASTROPODA				792	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/18/83
TRANSECT 17 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	11	3	5	131

UNIONIDAE	2	0	1	
ALL PELECYPODA				152

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/18/83
DETROIT RIVER		TRANSECT 17 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	1	3	4		55

ALL CNIDARIA					55
RHABDOCOELA	1	0	0		7
TRICLADIDA	0	0	1		7
NEMERTINEA	52	34	14		689
NEMATODA	28	66	4		675
OLIGOCHAETA					
SPIROSPERMA	36	16	25		

OTHER	69	57	49		1735
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	491	1033	574		14448

ALL POLYCHAETA					14448
COPEPODA					
EPISHURA LACUSTRIS	1	0	0		

HARPACTICOIDA	0	1	0		

ALL COPEPODA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/18/83
TRANSECT 17 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	3	28

ALL AMPHIPODA				28
TERRESTRIAL INSECT				
DIPTERA	1	0	0	7
CHIRONOMIDAE				
EPHEMEROPTERA	10	4	10	165
BAETISCIDAE				
BAETISCA	0	3	7	

ALL EPHEMEROPTERA				69
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	12	8	87	

HYDROPSYCHE	0	0	8	

LEPTOCERIDAE	0	0	1	
CERACLEA				

POLYCENTROPIDIDAE				
NEURECLIPSIS	0	0	3	

ALL TRICHOPTERA				820
ACARINA				
	0	0	2	14
GASTROPODA				
AMNICOLA	6	8	18	

GYRAULUS	0	1	0	

ALL GASTROPODA				227

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/18/83
TRANSECT 17 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	6	2	

SPHAERIUM	2	2	5	

ALL SPHAERIIDAE				131
UNIONIDAE				
TRUNCILLA DONACIFORMIS	0	1	0	

ALL PELECYPODA				138

MACROZOOBENTHOS PONAR GRAB COUNT DATA		10/19/83	
DETROIT RIVER	TRANSECT 18 STATION 1		
TAXON	GRAB COUNTS	ESTIMATED	
	1 2 3	NO./SQ. METER	
RHABDOCOELA	42 39 23	716	
TRICLADIDA	0 165 0	1136	
NEMERTINEA	4 76 11	627	
NEMATODA	71 17 11	682	
OLIGOCHAETA			
NAIS	0 16 16		
SPIROSPERMA	337 69 44		
STYLARIA	62 190 10		
OTHER	1585 668 887	26817	
ALL OLIGOCHAETA			
CLADOCERA			
ILYOCRYPTUS	0 1 8	62	
ALL CLADOCERA		62	
COPEPODA			
CYCLOPS BICUSPIDATUS	0 1 8		
DIAPTOMUS	0 16 0		
MACROCYCLOPS	1 0 1		
ALL COPEPODA		186	

B-315

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 18 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	3	0	0	

HYALELLA AZTECA	9	9	0	

PONTOPOREIA HOYI	0	1	0	

ALL AMPHIPODA				152
DIPTERA				
CHIRONOMIDAE	34	40	9	572
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	0	1	0	

ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	1	0	

HYDROPTILIDAE				
HYDROPTILA	3	3	2	

POLYCENTROPIDIDAE				
NEURECLIPSIS	1	0	0	

POLYCENTROPUS	1	3	0	

ALL TRICHOPTERA				103
ODONATA				
COENAGRIONIDAE	0	2	1	21
ACARINA	7	10	0	117

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 18 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	1	5	1	

FERISSIA	20	118	3	

GYRAULUS	1	5	0	

PHYSA	1	0	0	

VALVATA TRICARINATA	0	0	1	

ALL GASTROPODA				1074
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	30	15	23	468

ALL PELECYPODA				468

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 18 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
FISH					
ETHEOSTOMA NIGRUM		0	1	0	7
ALL FISH					7
RHABDOCOELA		326	31	31	2672
TRICLADIDA		0	0	65	448
NEMERTINEA		72	26	30	881
NEMATODA		17	18	76	764
HIRUDINEA					
GLOSSIPHONIIDAE					
BATRACHODELLA PHALERA		0	0	1	
ALL HIRUDINEA					7
OLIGOCHAETA					
NAIS		17	9	64	
SPIROSPERMA		404	76	165	
STYLARIA		125	139	6	
OTHER					
ALL OLIGOCHAETA		1320	873	1690	33662
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	0	32	220
ALL POLYCHAETA					220

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 18 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CLADOCERA				
CAMPTOCERCUS	16	0	0	

EURYCERCUS LAMELLATUS	0	1	0	

ILYOCRYPTUS	16	0	0	

ALL CLADOCERA				227
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	0	

DIAPTOMUS	16	0	0	

ALL COPEPODA				165
AMPHIPODA				
GAMMARUS	15	1	0	

HYALELLA AZTECA	21	9	1	

ALL AMPHIPODA				324
DIPTERA				
CHIRONOMIDAE	3	7	7	117
CULICIDAE	0	1	0	
CHAOBORUS				

PSYCHODIDAE	0	0	1	131
ALL DIPTERA				
TRICHOPTERA				
HYDROPTILIDAE	0	0	2	
HYDROPTILA				

POLYCENTROPIDIDAE				
POLYCENTROPUS	0	0	1	

ALL TRICHOPTERA				21
ODONATA				
COENAGRIONIDAE	0	2	0	14

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/19/83
TRANSECT. 18 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	19	1	20	275	
GASTROPODA					
AMNICOLA	1	3	15		
ELIMIA LIVESCENS	0	1	0		
FERISSIA	6	17	14		
GYRAULUS	3	1	0		
PHYSA	11	9	19		
ALL GASTROPODA				689	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	12	8	15		
SPHAERIUM	0	0	1		
ALL SPHAERIIDAE				248	
ALL PELECYPODA				248	

B-320

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 18 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
RHABDOCOELA		9	0	8	117
NEMERTINEA		9	0	38	324
OLIGOCHAETA		36	18	12	
SPIROSPERMA					

OTHER		408	223	215	
ALL OLIGOCHAETA					6281
POLYCHAETA		0	0	8	55
MANAYUNKIA SPECIOSA					

ALL POLYCHAETA					55
OSTRACODA		0	9	0	62
AMPHIPODA		1	0	0	7
HYALELLA AZTECA					

ALL AMPHIPODA					7
DIPTERA		0	0	1	7
CHIRONOMIDAE		1	0	0	
PSYCHODIDAE					14
ALL DIPTERA		0	0	3	
ACARINA					21

B-321

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 18 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	1	9	1	

CAMPELONA	1	0	0	

FERISSIA	0	0	1	

VALVATA SINCERA	2	0	0	

ALL GASTROPODA				103
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	5	37	358

ALL PELECYPODA				358

MACRUZOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER	TRANSECT 19 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		0	1	0	7

ALL CNIDARIA					7
RHABDOCOELA		9	56	4	475
TRICLADIDA		0	0	17	117
NEMERTINEA		36	56	71	1123
NEMATODA		8	18	31	393
OLIGOCHAETA					
NAIS		0	0	10	

SPIROSPERMA		55	50	32	

STYLARIA		0	0	1	

OTHER		62	93	51	
ALL OLIGOCHAETA					2438
POLYCHAETA					
MANAYUNKIA SPECIOSA		112	56	80	1708

ALL POLYCHAETA					1708
COPEPODA					
EPISHURA LACUSTRIS		0	0	8	

HARPACTICOIDA		0	8	0	

ALL COPEPODA					110

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/19/83

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	0	3	0	21
ALL AMPHIPODA				21
DIPTERA				
CERATOPOGONIDAE	3	0	0	
CHIRONOMIDAE	0	1	1	14
ALL DIPTERA				34
ACARINA	6	15	0	145
GASTROPODA				
ANNICOLA	1	3	5	
ELIMIA LIVESCENS	0	0	1	
FERISSIA	0	0	3	
PHYSA	0	0	1	
ALL GASTROPODA				96
PELECYPODA				
SPHAERIIDAE	65	45	19	888
PISIDIUM				
ALL PELECYPODA				888

B-324

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER	TRANSECT 19 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
RHABDOCOELA		2	4	0	41
NEMERTINEA		72	49	65	1281
NEMATODA		8	8	4	138
OLIGOCHAETA					
SPIROSPERMA		0	7	19	
STYLARIA		0	4	0	
OTHER					
ALL OLIGOCHAETA		289	198	149	4587
POLYCHAETA					
MANAYUNKIA SPECIOSA		968	548	501	13890
ALL POLYCHAETA					13880
COPEPODA					
DIAPTOMUS		0	4	0	28
ALL COPEPODA					28
AMPHIPODA					
GAMMARUS		0	4	0	28
ALL AMPHIPODA					28
DIPTERA					
CHIRONOMIDAE		1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
TRANSECT 19 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	

TRICHOPTERA					
LEPTOCERIDAE					
DE CETIS	0	0	1		

ALL TRICHOPTERA					7
ACARINA	1	1	1		21
GASTROPODA					
AMNICOLA	0	3	3		

ELIMIA LIVESCENS	19	9	8		

ALL GASTROPODA					289
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	1	22	8		213

ALL PELECYPODA					213

MACROZOOBENTHOS PONAR GRAB COUNT DATA		10/19/83	
DETROIT RIVER	TRANSECT 19 STATION 3		
TAXON	GRAB COUNTS	ESTIMATED	
	1 2 3	NO./SQ. METER	
RHABDOCOELA	1 1 1	21	
TRICLADIDA	0 1 0	7	
NEMERTINEA	56 43 21	826	
NEMATODA	2 2 1	34	
OLIGOCHAETA			
NAIS	1 0 1		

SPIROSPERMA	1 3 11		

OTHER	2 6 5	207	
ALL OLIGOCHAETA			
POLYCHAETA			
MANAYUNKIA SPECIOSA	2 3 3	55	

ALL POLYCHAETA		55	
AMPHIPODA			
GAMMARUS	1 0 0	7	

ALL AMPHIPODA		7	
TERRESTRIAL INSECT	0 1 0	7	

B-327

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 19 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	1	0	1	
ELIMIA LIVESCENS	1	3	0	
PHYSA	0	4	0	
ALL GASTROPODA				69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	2	0	14
ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 20 STATION 1			
TAXON		GRAB COUNTS			ESTIMATED NO./SQ. METER
		1	2	3	
CNIDARIA					
HYDRA		13	1	0	96

ALL CNIDARIA					96
RHABDOCOELA		12	56	58	868
TRICLADIDA		126	52	76	1749
NEMERTINEA		38	107	42	1288
NEMATODA		10	40	34	578
OLIGOCHAETA					
NAIS		0	8	8	

SPIROSPERMA		33	59	119	

STYLARIA		145	42	108	

OTHER		42	115	141	
ALL OLIGOCHAETA					5647
POLYCHAETA					
MANAYUNKIA SPECIOSA		13	11	57	558

ALL POLYCHAETA					558
CLADOCERA					
ILYOCRYPTUS		0	1	0	

SIDA CRYSTALLINA		1	1	0	

ALL CLADOCERA					21

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/19/83

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
HARPACTICOIDA	0	8	0	
MACROCYCLOPS	15	0	2	
ALL COPEPODA				172
AMPHIPODA				
GAMMARUS	41	0	17	
HYALELLA AZTECA	18	9	19	
ALL AMPHIPODA				716
DIPTERA				
CHIRONOMIDAE	62	85	27	1198
EPHEMEROPTERA				
CAENIDAE	1	2	1	
CAENIS				
AMETROPIDAE				
TRICHOPTERIDAE	1	0	0	
ALL EPHEMEROPTERA				34
TRICHOPTERA				
HYDROPSYCHIDAE	0	2	0	
CHEIMATOPSYCHE	0	1	0	
HYDROPSYCHE				
HYDROPTILIDAE	3	6	1	
HYDROPTILA				
POLYCENTROPODIDAE				
NEURECLIPSIS	0	2	0	
POLYCENTROPUS	7	1	3	
ALL TRICHOPTERA				179
ODONATA				
COENAGRIONIDAE	4	0	3	48

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
TRANSECT 20 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3	4	NO./SQ. METER
-----	9	3	4		110
ACARINA					
GASTROPODA					
AMNICOLA	13	58	3		

ELIMIA LIVESCENS	2	2	0		

FERISSIA	7	1	2		

GYRAULUS	1	1	0		

PHYSA	4	1	4		

ALL GASTROPODA					682
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	43	50	41		923

ALL PELECYPODA					923

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 20 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		0	0	4	28

ALL CNIDARIA					28
RHABDOCOELA		1	0	1	14
TRICLADIDA		6	14	25	310
NEMERTINEA		74	34	54	1116
NEMATODA		92	14	31	943
OLIGOCHAETA					
SPIROSPERMA		31	2	16	

OTHER		39	10	10	744
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		9	0	2	76

ALL POLYCHAETA					76
COPEPODA					
DIATOMUS		1	0	0	7

ALL COPEPODA					7

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 20 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	5	0	0	

HYALELLA AZTECA	1	0	0	

ALL AMPHIPODA				41
DIPTERA				
CHIRONOMIDAE	1	0	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	2	0	0	

ALL TRICHOPTERA				14
ACARINA				
	1	0	1	14
GASTROPODA				
AMNICOLA	18	7	10	

ELIMIA LIVESCENS	112	28	39	

ALL GASTROPODA				1474
FLECYFODA				
SPHAERIIDAE				
PISIDIUM	2	0	0	14

ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER TRANSECT 20 STATION 3					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA					

ALL CNIDARIA	1	13	0		96
RHABDOCOELA					96
TRICLADIDA	0	4	1		34
NEMERTINEA	0	0	8		55
NEMATODA	5	0	22		186
OLIGOCHAETA	81	5	181		1839
SPIROSPERMA					

STYLARIA	1	0	0		
OTHER	0	0	8		
ALL OLIGOCHAETA	2	0	1		83
POLYCHAETA					
MANAYUNKIA SPECIOSA					

ALL POLYCHAETA	9	0	0		62
COPEPODA					62
LIMNOCALANUS					

ALL COPEPODA	0	2	0		14
					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
TRANSECT 20 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	1	0	2		

ALL EPHEMEROPTERA					21
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	11	4	27		

HYDROPSYCHE	2	0	5		

ALL TRICHOPTERA					337
GASTROPODA					
ELIMIA LIVESCENS	4	2	15		

PHYSA	0	0	1		

ALL GASTROPODA					152

B-335

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 21 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	12	72	47	902	
TRICLADIDA	1	0	0	7	
NEMERTINEA	43	115	31	1302	
NEMATODA	155	106	112	2569	
OLIGOCHAETA					
NAIS	0	40	0		

SPIROSPERMA	110	121	59		

STYLARIA	12	51	35		

OTHER					
ALL OLIGOCHAETA	210	142	104	6088	
POLYCHAETA					
MANAYUNKIA SPECIOSA	308	866	256	9848	

ALL POLYCHAETA				9848	
CLADOCERA					
SIDA CRYSTALLINA	0	2	0	14	

ALL CLADOCERA				14	
COPEPODA					
MACROCYCLOPS	0	26	1	186	

ALL COPEPODA				186	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
TRANSECT 21 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	1	2	1		

HYALELLA AZTECA	1	0	0		

ALL AMPHIPODA					34
TERRESTRIAL INSECT					
DIPTERA					7
CHIRONOMIDAE	11	25	34		482
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	0	1	0		

BAETISCIDAE					
BAETISCA	0	0	1		

ALL EPHEMEROPTERA					14
LEPIDOPTERA	1	0	0		7
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUKATOPSYCHE	13	0	2		

HYDROPSYCHE	10	1	28		

LEPTOCERIDAE					
OECETIS	0	8	0		

POLYCENTROPODIDAE					
NEURECLIPSIS	18	4	23		

POLYCENTROPUS	0	0	1		

ALL TRICHOPTERA					744

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
TRANSECT 21 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3		NO./SQ. METER
ACARINA	0	3	9		83
GASTROPODA					
ANNICOLA	11	23	11		

CAMPELONA	0	2	0		

ELIMIA LIVESCENS	0	1	1		

FERISSIA	0	0	4		

GYRAULUS	0	0	1		

PHYSA	0	3	11		

ALL GASTROPODA					468
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	47	42	18		737

UNIONIDAE					
LAMPISILIS RADIATA SILIQUIDEA	0	0	1		

ALL PELECYPODA					744

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 21 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	11	5	16	220	
TRICLADIDA	3	0	0	21	
NEMERTINEA	68	99	29	1350	
NEMATODA	16	0	0	110	
OLIGOCHAETA					
SPIROSPERMA	14	0	6		
OTHER					
ALL OLIGOCHAETA	118	91	49	1914	
POLYCHAETA					
MANAYUNKIA SPECIOSA	32	48	56	937	
ALL POLYCHAETA				937	
COPEPODA					
EURYTEMORA	16	0	0		
HARPACTICOIDA	16	0	0		
ALL COPEPODA				220	
AMPHIPODA					
GAMMARUS	0	1	0		
HYALELLA AZTECA	1	0	0		
ALL AMPHIPODA				14	

10/19/83

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA				
CHIRONOMIDAE	0	1	0	7
CULICIDAE				
CHAOBORUS	0	1	0	

ALL DIPTERA				14
TRICHOPTERA				
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	

ALL TRICHOPTERA				7
ACARINA	1	0	1	14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	26	8	8	289

ALL PELECYPODA				289

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/19/83
DETROIT RIVER		TRANSECT 21 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER	
	1	2	3		
RHABDOCOELA	2	3	3	55	
NEMERTINEA	35	74	72	1246	
NEMATODA	0	17	0	117	
OLIGOCHAETA					
SPIROSPERMA	7	7	4		

OTHER	42	24	49		
ALL OLIGOCHAETA				916	
POLYCHAETA					
MANAYUNKIA SPECIOSA	65	96	113	1887	

ALL POLYCHAETA				1887	
COPEPODA					
DIAPYCNUS	0	16	0	110	

ALL COPEPODA				110	
DIPTERA					
CHIRONOMIDAE	0	0	3	21	
GASTROPODA					
AMNICOLA	1	0	2		

FERISSIA	1	0	0		

ALL GASTROPODA				28	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/19/83
TRANSECT 21 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

ALL PELECYPODA	4	13	32	337
				337

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
ST. CLAIR RIVER	TRANSECT	1	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
NEMERTINEA	0	1	0	7	7
NEMATODA	0	1	0	7	7
COPEPODA					
CYCLOPS BICUSPIDATUS	1	1	0		
DIPTOMUS	12	3	5		
LIMNOCALANUS	1	1	6		
ALL COPEPODA				207	
TERRESTRIAL INSECT	1	0	0	7	7
DIPTERA					
CHIRONOMIDAE	2	1	1	28	28
PELECYPODA					
SPHAERIIDAE	1	0	0	7	7
PISIDIUM					
ALL PELECYPODA				7	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
ST. CLAIR RIVER	TRANSECT 1	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	1	0		
DIAPTOMUS	4	7	2		
LIMNOCALANUS	3	0	2		
ALL COPEPODA					131
DIPTERA					
CHIRONOMIDAE	2	3	5		69
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	0	1	0		7
ALL PELECYPODA					7

B-344

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
ST. CLAIR RIVER	TRANSECT	1	STATION	3	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	0	0	1	7	
HYDRA					

ALL CNIDARIA				7	
NEMERTINEA	0	0	1	7	
NEMATODA	0	0	8	55	
OLIGOCHAETA	0	0	2	14	
COPEPODA					
DIAPTOMUS	4	2	2		

LIMNOCALANUS	0	2	1		

ALL COPEPODA				76	
OSTRACODA	0	0	1	7	
TERRESTRIAL INSECT	1	0	0	7	
DIPTERA					
CHIRONOMIDAE	11	6	29	317	

B-345

MACROZOBENTHOS PONAR GRAB COUNT DATA						
ST. CLAIR RIVER		TRANSECT 2 STATION 1		5/ 7/84		
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		

FISH						
ICHTHYOMYZON FOSSOR	0	0	1			7
ALL FISH						7

PORIFERA						
SPONGILLA	0	0	+			+

ALL PORIFERA						0

CNIDARIA						
HYDRA	8	0	0			55

ALL CNIDARIA						55

RHABDOCELA	17	3	15			241

NEMATODA	1	9	20			207

OLIGOCHAETA						
SPIROSPERMA	50	46	38			

OTHER	830	719	368			14125
ALL OLIGOCHAETA						

COPEPODA						
DIAPTOMUS	8	0	19			

HARPACTICOIDA	1	0	0			

ALL COPEPODA						193

OSTRACODA	2	1	2			34

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 7/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	2	5	3	

HYALELLA AZTECA	0	1	0	

ALL AMPHIPODA				76
ISOPODA				
ASELLUS	0	0	1	7

ALL ISOPODA				7
TERRESTRIAL INSECT	1	1	5	48
DIPTERA				
CERATOPOGONIDAE	5	0	0	
CHIRONOMIDAE	100	252	49	2762
EMPIDIDAE	1	0	0	
PSYCHODIDAE	1	11	9	
ALL DIPTERA				2947
EPHEMEROPTERA				
EPHEMERIDAE	3	4	0	
HEXAGENIA				

ALL EPHEMEROPTERA				48
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	2	0	

ALL COLEOPTERA				14
LEPIDOPTERA	2	0	0	14

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 7/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE				
HYDROPSYCHE	1	2	1	
LEPTOCERIDAE				
MYSTACIDES	1	1	0	
DECTIS				
POLYCENTROPIDIDAE	0	1	0	
NEURECLIPSIS	0	1	0	
ALL TRICHOPTERA	0	1	0	62
ACARINA				
GASTROPODA				
AMNICOLA	3	1	0	28
GYRAULUS				
PHYSA	96	65	37	
ALL GASTROPODA	0	0	3	
PELECYPODA	2	1	4	
SPHAERIIDAE				
PISIDIUM				
ALL PELECYPODA	3	2	3	1432
				55
				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA							5/ 7/84
ST. CLAIR RIVER		TRANSECT 2		STATION 2			
TAXON	GRAB COUNTS						ESTIMATED
	1	2	3				NO./SQ. METER
CNIDARIA	12	15	8				241
HYDRA							

ALL CNIDARIA							241
RHABDOCOELA	1	4	1				41
TRICLADIDA	1	11	0				83
NEMERTINEA	5	5	0				69
NEMATODA	10	15	32				393
OLIGOCHAETA							
NAIS	0	4	3				

SPIROSPERMA	16	23	9				

OTHER	28	76	37				
ALL OLIGOCHAETA							1357
CLADOCERA							
DAPHNIA	0	0	1				

ELYDROPTUS	0	0	1				

ALL CLADOCERA							14

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	4	2	0		
DIPTOMUS	28	0	6		
HARPACTICOIDA	6	7	34		
LIMNOCALANUS	5	1	0		
ALL COPEPODA				647	
DECAPODA					
ORCONECTES	1	0	0		7
ALL DECAPODA					7
AMPHIPODA					
GAMMARUS	8	10	5		
HYALELLA AZTECA	8	8	6		
ALL AMPHIPODA				317	
TERRESTRIAL INSECT					
	0	1	1		14
DIPTERA					
CHIRONOMIDAE	184	222	167		3946
EMPIDIDAE	3	3	5		
PSYCHODIDAE	0	0	1		4028
ALL DIPTERA					

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 7/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	17	9	
EPHEMERIDAE				
HEXAGENIA	1	1	4	
EPHEMERELLIDAE				
EPHEMERELLA	0	3	0	
BAETISCIDAE				
BAETISCA	1	0	1	
ALL EPHEMEROPTERA				324
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	3	8	5	
ALL COLEOPTERA				110
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	5	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	13	50	4	
HYDROPSYCHE	11	19	2	
HYDROPTILIDAE				
LEPTOCERIDAE	1	0	0	
OECETIS	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	3	2	2	
ALL TRICHOPTERA				799
PLECOPTERA				
	1	0	0	7
ACARINA	9	11	17	255

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	60	44	74		
ELIMIA LIVESCENS	43	56	20		
FERISSIA	2	2	1		
LYMNAEA	0	0	1		
PHYSA	3	11	2		
ALL GASTROPODA				2197	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	9	7	2		124
ALL PELECYPODA					124

B-352

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
ST. CLAIR RIVER	TRANSECT 2	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	8	37	5	344	
HYDRA					
ALL CNIDARIA				344	
RHABDOCELA	1	2	0	21	
TRICLADIDA	1	1	0	14	
NEMERTINEA	2	5	1	95	
NEMATODA	13	12	9	234	
OLIGOCHAETA					
SPIROSPERMA	4	15	11		
OTHER	96	76	53	1756	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	0	1	7	
ALL POLYCHAETA				7	
COPEPODA					
DIATOMUS	16	7	2		
HARPACTICOIDA	6	3	4		
LIMNOCALANUS	2	0	5		
ALL COPEPODA				310	

B-353

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 7/84

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OSTRACODA	1	2	1	28
AMPHIPODA				
GAMMARUS	13	7	0	
HYALELLA AZTECA	17	15	11	
ALL AMPHIPODA				434
TERRESTRIAL INSECT				
DIPTERA				
CHIRONOMIDAE	204	176	181	3863
EMPIDIDAE	4	11	6	4008
ALL DIPTERA				
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	18	10	
EPHEMERIDAE				
HEXAGENIA	0	5	1	
EPHEMERELLIDAE				
EPHEMERELLA	1	2	0	
HEPTAGENIIDAE				
STENONEMA	0	1	0	
ALL EPHEMEROPTERA				331
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	4	1	3	
ALL COLEOPTERA				55

B-354

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
TRANSECT 2 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	0	0	1		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	9	20	2		
HYDROPSYCHE	6	15	1		
RHYACOPHILIDAE					
PROPTYLA	2	1	3		413
ALL TRICHOPTERA					
PLECOPTERA					
ACARINA	0	1	0		7
GASTROPODA	6	27	7		275
AMNICOLA					
ELIMIA LIVESCENS	9	30	7		
LYMNAEA	40	86	32		
PHYSA	0	1	0		
VALVATA TRICARINATA	0	1	1		
ALL GASTROPODA	1	1	0		1439
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	1	5	8		
SPHAERIUM	0	2	0		
ALL SPHAERIIDAE					110
ALL PELECYPODA					110

B-355

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
ST. CLAIR RIVER	TRANSECT	3	STATION 1		
TAXON		1	2	3	ESTIMATED NO./SQ. METER
FISH		0	0	1	7
FISH EGGS					7
ALL FISH					
CNIDARIA		1	0	1	14
HYDRA					14
ALL CNIDARIA					
COPEPODA		4	0	4	
CYCLOPS BICUSPIDATUS					
DIAPYCNUS		28	4	20	
ALL COPEPODA					413
AMPHIPODA		0	0	1	7
GAMMARUS					7
ALL AMPHIPODA					
DIPTERA		15	10	14	269
CHIRONOMIDAE		0	1	0	275
EMBIIDAE					
ALL DIPTERA					
EPHEMEROPTERA		0	0	1	
CAENIDAE					
CAENIS					
ALL EPHEMEROPTERA					7
TRICHOPTERA		1	0	0	
LEPTOCERIDAE					
CERATODA					
ALL TRICHOPTERA					7
ACARINA		1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA							5/ 7/84
ST. CLAIR RIVER	TRANSECT	3	STATION 2	GRAB COUNTS			ESTIMATED
TAXON				1	2	3	NO./SQ. METER

FISH							
FISH EGGS				1	0	0	7

ALL FISH							7
CNIDARIA							
HYDRA				1	1	1	21

ALL CNIDARIA							21
COPEPODA							
CYCLOPS BICUSPIDATUS				1	1	1	

DIAPTOMUS				5	0	13	

LIMNOCALANUS				1	0	0	

ALL COPEPODA							152
TERRESTRIAL INSECT							
				1	0	0	7
DIPTERA							
CHIRONOMIDAE				32	13	21	455
EMPIDIDAE				5	1	0	
ALL DIPTERA							496
ACARINA				1	0	1	14
GASTROPODA							
ELIMIA LIVESCENS				0	2	1	21

ALL GASTROPODA							21
PELECYPODA							
SPHAERIIDAE							
PISIDIUM				1	6	0	48

ALL PELECYPODA							48

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 7/84
ST. CLAIR RIVER	TRANSECT 3	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
FISH EGGS	1	1	1		21

ALL FISH					21

CNIDARIA					
HYDRA	0	0	2		14

ALL CNIDARIA					14

TRICLADIDA	0	1	3		28

NEMATODA	2	0	1		21

OLIGOCHAETA	0	1	29		207

COPEPODA					
DIAPYCNUS	30	4	4		

LIMNOCALANUS	1	0	1		

ALL COPEPODA					275

AMPHIPODA					
GAMMARUS	2	0	0		

HYALELLA AZTECA	1	0	0		

ALL AMPHIPODA					21

DIPTERA					
CHIRONOMIDAE	54	33	40		875
EMPHIDAE	0	1	1		888
ALL DIPTERA					

5/ 7/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
EPHEMERELLIDAE				
EPHEMERELLA	0	0	6	

BAETISCIDAE				
BAETISCA	2	0	0	

ALL EPHEMEROPTERA				55
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	0	0	1	

HYDROPSYCHE	1	1	71	

LEPTOCERIDAE				
MYSTACIDES	1	0	0	

RHYACOPHILIDAE				
PROTOPTILA	0	1	0	

ALL TRICHOPTERA				523
ACARINA				
	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	31	12	16	

GYRAULUS	1	0	0	

ALL GASTROPODA				413

3 359

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	4	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH	0	0	1	7	
FISH EGGS					

ALL FISH				7	
CNIDARIA					
HYDRA	0	2	0	14	

ALL CNIDARIA				14	
TRICLADIDA	0	1	0	7	
NEMATODA	33	58	69	1102	
HIRUDINEA					
ERPOBDELLIDAE	0	3	0	21	
OLIGOCHAETA					
SPIROSPERMA	34	49	30		

OTHER	23	50	27		
ALL OLIGOCHAETA				1467	
COPEPODA					
DIATOMUS	2	4	3		

LIMNOCALANUS	2	1	3		

ALL COPEPODA				103	
OSTRACODA	0	0	1	7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 4 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
HYALELLA AZTECA	0	0	1	7	
ALL AMPHIPODA				7	
DIPTERA					
CHIRONOMIDAE	11	21	7	269	
EPHEMEROPTERA					
CAENIDAE	0	1	0		
CAENIS					
EPHEMERIDAE					
HEXAGENIA	0	2	0		
ALL EPHEMEROPTERA				21	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	1		
ALL TRICHOPTERA				7	
ACARINA	0	3	0	21	
GASTROPODA					
AMNICOLA	39	50	27		
ELIMIA LIVESCENS	1	18	9		
PHYSA	0	0	2		
VALVATA SINCERA	1	0	0		
VALVATA TRICARINATA	48	55	25		
ALL GASTROPODA				1894	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	24	49	40		
ALL PELECYPODA				778	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT 4	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA					
ALL CNIDARIA	6	0	8		96
RHABDOCOELA					96
TRICLADIDA	12	8	8		193
NEMATODA	0	0	1		7
HIRUDINEA	24	49	125		1364
ERPOBDELLIDAE					
GLOSSIPHONIIDAE	0	0	1		
PLACOBDELLA PAPILLIFERA	1	0	0		
ALL HIRUDINEA					14
OLIGOCHAETA					
NAIS	5	1	2		
SPIROSPERMA	10	6	13		
OTHER					
ALL OLIGOCHAETA	237	288	233		5475
COPEPODA					
DJAPTOMUS	3	0	0		
HARPACTICOIDA	3	0	16		
LIMNOCALANUS	0	0	1		
ALL COPEPODA					158

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 4 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	1	0	0	7	
OSTRACODA					
AMPHIPODA					
GAMMARUS	4	2	4		

MYALELLA AZTECA	14	2	11		

PONTOPOREIA HOYI	19	0	0		

ALL AMPHIPODA				386	
TERRESTRIAL INSECT	3	0	0	21	
DIPTERA					
CERATOPOGONIDAE	0	0	1		
CHIRONOMIDAE	118	22	152	2011	
EMPIDIDAE	0	0	1		
ALL DIPTERA				2025	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	1	0	1		

EPHEMERIDAE					
HEXAGENIA	1	0	20		

EPHEMERELLIDAE					
EPHEMERELLA	3	0	1		

HEPTAGENIIDAE					
STENONEMA	1	0	0		

ALL EPHEMEROPTERA				193	

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 4 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	0	3	0	21	
LEPIDOPTERA					
TRICHOPTERA					
HYDROPSYCHIDAE	1	0	2		
CHEUMATOPSYCHE					

HYDROPSYCHE	5	1	3		

LEPTOCERIDAE	1	0	0		
MYSTACIDES					

OECETIS	0	0	1		

TRIAENODES	1	0	2		

ALL TRICHOPTERA					117
ACARINA	9	1	16		179
GASTROPODA					
AMNICOLA	34	12	26		

ELIMIA LIVESCENS	0	1	0		

PHYSA	3	0	7		

VALVATA SINCERA	1	0	3		

VALVATA TRICARINATA	32	10	23		

ALL GASTROPODA					1047
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	32	6	20		399

ALL PELECYPODA					399

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	4	STATION 3		
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
FISH					
UNIDENTIFIED FISH REMAINS		0	0	1	7
ALL FISH					7
CNIDARIA					
HYDRA		1	3	7	76
ALL CNIDARIA					76
RHABDOCELA		0	0	1	7
TRICLADIDA		0	0	1	7
NEMATODA		41	7	24	496
OLIGOCHAETA					
NAIS		1	0	3	
SPIROSPERMA		1	6	11	
OTHER					
ALL OLIGOCHAETA		83	70	198	2569
COPEPODA					
CYCLOPS BICUSPIDATUS		2	0	1	
DIAPTOMUS		6	3	0	
HARPACTICOIDA		0	0	1	
LIMNOCALANUS		0	1	0	
ALL COPEPODA					96

B365

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 8/84
TRANSECT 4 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	2	0	16	

HYALELLA AZTECA	1	0	36	

PONTOPOREIA HOYI	0	1	0	

ALL AMPHIPODA				386
ISOPODA				
ASELLUS	1	0	0	7

ALL ISOPODA				7
TERRESTRIAL INSECT				
	0	0	5	34
DIPTERA				
CERATOPOGONIDAE	0	1	1	
CHIRONOMIDAE	66	23	181	1859
ALL DIPTERA				1873
EPHEMEROPTERA				
EPHEMERIDAE	0	0	1	
HEXAGENIA				

EPHEMERELLIDAE				
EPHEMERELLA	0	0	2	

ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE	1	1	3	
CHELMATOPSYCHE				

HYDROPSYCHE	0	1	17	

LEPTOCERIDAE				
MYSTACIDAE	0	0	1	

OECETIS	0	0	1	

ALL TRICHOPTERA				172

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 4 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PLECOPTERA	0	0	1	7	
ACARINA	1	0	2	21	
GASTROPODA					
AMNICOLA	7	1	21		

CAMPELOMA	1	0	0		

ELIMIA LIVESCENS	6	2	12		

GYRAULUS	1	1	1		

PHYSA	0	0	7		

VALVATA TRICARINATA	0	0	4		

ALL GASTROPODA				441	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	10	2	5	117	

ALL PELECYPODA				117	

B-367

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	5	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
FISH EGGS	0	0	1		7
ALL FISH					7
CNIDARIA					
HYDRA	2	0	2		28
ALL CNIDARIA					28
NEMATODA	51	116	17		1267
OLIGOCHAETA					
NAIS	1	0	0		
SPIROSPERMA	21	22	14		
OTHER	26	12	23		
ALL OLIGOCHAETA					820
COPEPODA					
CYCLOPS BICUSPIDATUS	2	8	0		
DIAPTOMUS	5	8	3		
HARPACTICOIDA	1	0	1		
ALL COPEPODA					193
AMPHIPODA					
GAMMARUS	35	6	34		516
ALL AMPHIPODA					516
TERRESTRIAL INSECT	0	2	1		21

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 5 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	152	101	77	2273	
EMPIDIDAE	2	1	0		
ALL DIPTERA				2293	
EPEMEROPTERA					
CAENIDAE					
CAENIS	1	0	0		

EPEMERIDAE					
HEXAGENIA	2	4	1		

ALL EPEMEROPTERA				55	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	7	0	2		

HYDROPSYCHIDAE					
CHEUMATOPSYCHE	1	0	0		

HYDROPSYCHE	2	0	1		

LEPTOCERIDAE					
OECEYIS	1	3	0		

SETODES	0	1	0		

TRIAENODES	4	0	0		

ALL TRICHOPTERA				152	
ODONATA					
GOMPHIDAE					
GOMPHUS	0	0	1	7	

ALL ODONATA				7	
ACARINA	4	1	0	34	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 8/84
TRANSECT 5 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	12	10	10	
ELIMIA LIVESCENS	57	48	31	
PHYSA	2	0	1	
VALVATA TRICARINATA	42	25	40	
ALL GASTROPODA				1914
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	51	36	22	751
ALL PELECYPODA				751

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	5	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA					
HYDRA				2 0 1	21

ALL CNIDARIA					21
NEMATODA				62 1 8	489
OLIGOCHAETA					
NAIS				0 0 1	

SPIROSPERMA				6 5 6	

OTHER				43 15 16	
ALL OLIGOCHAETA					634
CLADOCERA					
DAPHNIA				1 0 0	7

ALL CLADOCERA					7
COPEPODA					
CYCLOPS BICUSPIDATUS				0 5 2	

DIAPTOMUS				14 20 5	

HARPACTICOIDA				2 0 0	

LIMNOCALANUS				0 1 0	

ALL COPEPODA					337
AMPHIPODA					
GAMMARUS				4 0 0	28

ALL AMPHIPODA					28
DIPTERA					
CHIRONOMIDAE				52 44 70	1143

B-371

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 8/84

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	0	0	
ALL TRICHOPTERA				7
ACARINA				
	0	2	0	14
GASTROPODA				
AMNICOLA	8	24	30	
ELIMIA LIVESCENS	7	46	36	
PLEUROCERA ACUTA	1	2	3	
VALVATA TRICARINATA	8	16	18	
ALL GASTROPODA				1370
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	29	15	8	358
ALL PELECYPODA				358

B-372

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	5	STATION 3		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
FISH					
FISH EGGS				0 2 1	21

ALL FISH					21
CNIDARIA					
HYDRA				1 0 1	14

ALL CNIDARIA					14
OLIGOCHAETA				0 1 3	28
COPEPODA					
CYCLOPS BICUSPIDATUS				1 0 1	

DIATOMUS				6 3 4	

LIMNOCALANUS				5 0 1	

ALL COPEPODA					145
DIPTERA					
CERATOPOGONIDAE				0 0 1	
CHIRONOMIDAE				5 8 13	179
ALL DIPTERA					186
EPHEMEROPTERA					
HEPTAGENIIDAE				1 1 0	
STENONEMA					

ALL EPHEMEROPTERA					14
TRICHOPTERA					
HYDROPSYCHIDAE				1 0 0	
CHEMATOPSYCHE					

HYDROPSYCHE				1 0 0	

ALL TRICHOPTERA					14

B-373

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 8/84

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
ACARINA	0	0	1	7

B-374

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 8/84
ST. CLAIR RIVER	TRANSECT 6 STATION 1			
TAXON		GRAB COUNTS		
		1	2	3
		ESTIMATED		
		NO./SQ. METER		
PORIFERA		+	+	+
SPONGILLA				

ALL PORIFERA				0
CNIDARIA				
HYDRA		0	6	0

ALL CNIDARIA				41
RHABDOCELA		0	2	0
TRICLADIDA		0	3	2
NEMATODA		9	19	12
HIRUDINEA				275
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA		0	1	1

HELOBDELLA STAGNALIS		1	0	1

ALL HIRUDINEA				28
OLIGOCHAETA				
SPIROSPERMA		4	5	0

OTHER		36	29	41
ALL OLIGOCHAETA				792

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	1	1		
DIPTOMUS	7	5	5		
HARPACTICOIDA	0	1	3		
LIMNOCALANUS	3	1	0		
MACROCYCLOPS	0	1	1		
ALL COPEPODA					200
AMPHIPODA					
GAMMARUS	80	193	84		
HYALELLA AZTECA	13	25	9		
ALL AMPHIPODA					2782
ISOPODA					
ASELLUS	12	50	11		503
ALL ISOPODA					503
DIPTERA					
CERATOPOGONIDAE	5	6	1		
CHIRONOMIDAE	286	570	318		8085
EMPIDIDAE	0	1	0		
ALL DIPTERA					8174
EPIHEMEROPTERA					
CAENIDAE	13	19	7		
CAENIS					
EPIHEMERIDAE					
HEXAGENIA	10	14	12		
EPIHEMERELLIDAE					
EPIHEMERELLA	0	1	0		
ALL EPIHEMEROPTERA					523

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	1	1	0		
HYDROPTILIDAE					
ORTHOTRICHIA	0	0	1		
LEPTOCERIDAE					
CERACLEA	0	2	2		
DECETIS	30	28	31		
SETODES	0	0	3		
POLYCENTROPODIDAE					
POLYCENTROPUS	0	4	3		
ALL TRICHOPTERA					730
ACARINA	2	1	1		28
GASTROPODA					
AMNICOLA	80	78	64		
ELIMIA LIVESCENS	18	34	10		
GYRAULUS	30	12	15		
LYMNAEA	0	1	0		
PHYSA	12	12	3		
ALL GASTROPODA					2541
PELECYPODA					
SPHAERIIDAE					
SPHAERIUM	2	4	1		48
UNIONIDAE	0	0	1		
ALL PELECYPODA					55

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT 6	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	0	1	7	7
ALL CNIDARIA					7
NEMATODA	25	20	35	551	
OLIGOCHAETA					
SPIROSPERMA	0	1	4		
OTHER	11	44	13		
ALL OLIGOCHAETA				503	
CLADOCERA					
DAPHNIA	1	0	0	7	7
ALL CLADOCERA					7
COPEPODA					
CYCLOPS BICUSPIDATUS	0	1	1		
DIATOMUS	5	4	2		
HARPACTICOIDA	0	1	0		
LIMNOCALANUS	1	0	0		
ALL COPEPODA				103	
AMPHIPODA					
GAMMARUS	2	0	3		34
ALL AMPHIPODA					34
DIPTERA					
CERATOPOGONIDAE	1	0	0		
CHIRONOMIDAE	38	40	33		764
ALL DIPTERA					771

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 6 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	1	0		

EPHEMERIDAE					
HEXAGENIA	0	0	1		

ALL EPHEMEROPTERA					14
GASTROPODA					
AMNICOLA	10	2	0		

GYRAULUS	3	0	0		

VALVATA TRICARINATA	1	1	0		

ALL GASTROPODA					117
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	2	0	0		14

ALL PELECYPODA					14

B-379

MACROZOOBENTHOS PONAR GRAB COUNT DATA						
ST. CLAIR RIVER TRANSECT 6 STATION 3						5/ 8/84
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		
NEMATODA	7	10	8	172		
OLIGOCHAETA	19	9	1	200		
CLADOCERA	0	1	0	7		
DAPHNIA						
ALL CLADOCERA				7		
COPEPODA						
CYCLOPS BICUSPIDATUS	1	0	2			
DIAPTOMUS	5	4	10			
HARPACTICOIDA	1	1	0			
LIMNOCALANUS	1	1	0			
ALL COPEPODA				179		
AMPHIPODA						
GAMMARUS	0	3	0	21		
ALL AMPHIPODA				21		
TERRESTRIAL INSECT	0	1	0	7		
DIPTERA						
CHIRONOMIDAE	23	25	1	337		
EMPIDIDAE	0	1	0	344		
ALL DIPTERA						

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 8/84
TRANSECT 6 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	

EPHEMERIDAE				
HEXAGENIA	0	0	1	

ALL EPHEMEROPTERA				14
GASTROPODA				
AMNICOLA	4	2	0	

PHYSA	1	0	0	

ALL GASTROPODA				48

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	7	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	4	1	3	55	
TRICLADIDA	2	3	0	34	
NEMERTINEA	0	1	0	7	
NEMATODA	22	20	12	372	
BRYOZOA	+	0	0	+	
OLIGOCHAETA					
SPIROSPERMA	48	32	8		
OTHER	220	151	185	4435	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	2	0	14	
ALL POLYCHAETA				14	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 7 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	0	0		

DIAPTOMUS	13	18	1		

HARPACTICOIDA	2	0	8		

LIMNOCALANUS	0	2	0		

UNIDENTIFIED NAUPLII	0	0	1		

ALL COPEPODA					317
OSTRACODA	0	1	0		7
AMPHIPODA					
GAMMARUS	58	29	9		

HYALELLA AZTECA	1	1	2		

ALL AMPHIPODA					689
TERRESTRIAL INSECT	7	6	8		145
DIPTERA					
CERATOPOGONIDAE	0	1	0		
CHIRONOMIDAE	280	180	171		4345
EMBIIDAE	1	0	0		
ALL DIPTERA					4359

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 8/84

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	13	1	1	

EPHEMERIDAE				
HEXAGENIA	8	6	4	

ALL EPHEMEROPTERA				227
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	2	0	

TRIAENODES	1	0	1	

ALL TRICHOPTERA				34
ACARINA	1	1	1	21
GASTROPODA				
ANNICOLA	32	32	31	

ELIMIA LIVESCENS	7	10	0	

PHYSA	3	2	0	

ALL GASTROPODA				806
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	13	8	2	

SPHAERIUM	1	1	2	

ALL SPHAERIIDAE				186
ALL PELECYPODA				186

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	7	STATION	2	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA	0	0	+	+	
SPONGILLA					
ALL PORIFERA				0	
NEMATODA	23	32	34	613	
OLIGOCHAETA					
NAIS	1	0	0		
SPIROSPERMA	8	9	20		
OTHER	1	39	7		
ALL OLIGOCHAETA				585	
COPEPODA					
DIAPTOMUS	6	1	47		
LIMNOCALANUS	3	1	2		
ALL COPEPODA				413	
AMPHIPODA					
GAMMARUS	0	2	3	34	
ALL AMPHIPODA				34	
TERRESTRIAL INSECT	4	0	0	28	
DIPTERA					
CHIRONOMIDAE	3	24	15	289	

B-385

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 7 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA					

BAETISCIDAE					
BAETISCA	0	5	4		

ALL EPHEMEROPTERA	0	12	0		145

TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	0	3	0		

LEPTOCERIDAE					
CERACLEA	0	2	0		

DECTIS	0	1	1		

ALL TRICHOPTERA					48

ACARINA	0	1	0		7

GASTROPODA					
AMNICOLA	1	5	10		

ELIMIA LIVESCENS	2	21	13		

GYRAULUS	0	0	1		

PHYSA	0	3	0		

ALL GASTROPODA					386

PELECYPODA					
SPHAERIIDAE					
PISIDIUM	3	4	39		

SPHAERIUM	1	5	2		

ALL SPHAERIIDAE					372
ALL PELECYPODA					372

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER TRANSECT 7 STATION 3					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
NEMATODA	85	67	61	1467	
OLIGOCHAETA					
SPIROSPERMA	19	11	33		

OTHER	27	21	18		
ALL OLIGOCHAETA				888	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	0	0		

DIAPTOMUS	6	32	34		

LIMNOCALANUS	2	32	0		

ALL COPEPODA				737	
AMPHIPODA					
GAMMARUS	5	5	1		76

ALL AMPHIPODA				76	
TERRESTRIAL INSECT	3	0	2		34
DIPTERA					
CERATOPOGONIDAE	0	0	1		
CHIRONOMIDAE	12	24	22		389
EMPHIDAE	0	0	1		
ALL DIPTERA				413	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 7 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	1	1	0		

EPHEMERIDAE					
HEXAGENIA	0	1	3		

EPHEMERELLIDAE					
EPHEMERELLA	0	0	1		

ALL EPHEMEROPTERA				48	
LEPIDOPTERA					
	0	1	0		7
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	4	3	16		

HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	2		

LEPTOCERIDAE					
CERACLEA	0	1	0		

OECETIS	1	1	0		

TRIAENODES	1	1	0		

ALL TRICHOPTERA				207	
ACARINA					
	0	1	0		7
GASTROPODA					
AMNICOLA	5	5	12		

ELIMIA LIVESCENS	16	38	55		

PHYSA	0	1	0		

ALL GASTROPODA				909	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 8/84
TRANSECT 7 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	16	12	

SPHAERIUM	9	12	13	

ALL SPHAERIIDAE				468
UNIONIDAE				
LAMPIDILIS	0	1	0	

ALL PELECYPODA				475

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
ST. CLAIR RIVER	TRANSECT	8	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	0	5	1	41	
TRICLADIDA	0	1	0	7	
NEMATODA	32	70	9	764	
OLIGOCHAETA					
NAIS	1	0	0		

SPIROSPERMA	23	34	11		

OTHER	45	103	32		
ALL OLIGOCHAETA				1715	
POLYCHAETA					
MANAYUNKIA SPECIOSA	8	157	33	1364	

ALL POLYCHAETA				1364	
COPEPODA					
DIAPTOMUS	1	2	7		

HARPACTICOIDA	0	17	1		

LIMNOCALANUS	0	0	8		

PARACYCLOPS	0	8	3		

ALL COPEPODA				324	
AMPHIPODA					
GAMMARUS	8	5	4		

HYALELLA AZTECA	2	5	4		

ALL AMPHIPODA				193	

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 8 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ISOPODA					
ASELLUS	2	1	0		21

ALL ISOPODA					21
TERRESTRIAL INSECT					
DIPTERA					
CERATOPOGONIDAE	0	2	0		
CHIRONOMIDAE	35	55	27		806
ALL DIPTERA					820
EPHEMEROPTERA					
CAENIDAE	39	18	25		
CAENIS					

EPHEMERIDAE	6	1	2		
HEXAGENIA					

ALL EPHEMEROPTERA					627
TRICHOPTERA					
POLYCENTROPIDIDAE					
POLYCENTROPUS	0	2	0		

ALL TRICHOPTERA					14
ACARINA					
	0	2	0		14
GASTROPODA					
AMNICOLA	3	0	0		

ELIMIA LIVESCENS	1	3	2		

GYRAULUS	0	0	1		

PHYSA	1	0	0		

ALL GASTROPODA					76

B-391

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 8/84
TRANSECT 8 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

SPHAERIUM	1	1	0	

ALL SPHAERIIDAE	2	2	0	
ALL PELECYPODA				41
				41

MACROZOBENTHOS PONAR GRAB COUNT DATA						5/ 8/84
ST. CLAIR RIVER	TRANSECT	8	STATION 2			
TAXON	GRAB COUNTS				ESTIMATED	
	1	2	3	4	NO./SQ. METER	
RHABDOCOELA	9	3	4		110	
NEMATODA	27	29	41		668	
OLIGOCHAETA						
SPIROSPERMA	9	11	14			
OTHER						
ALL OLIGOCHAETA	39	71	100		1680	
POLYCHAETA						
MANAYUNKIA SPECIOSA	14	2	8		165	
ALL POLYCHAETA					165	
COPEPODA						
CYCLOPS BICUSPIDATUS	2	1	0			
DIAPTOMUS	14	3	8			
HARPACTICOIDA	1	0	0			
LIMNOCALANUS	2	0	0			
ALL COPEPODA					213	
OSTRACODA						
AMPHIPODA	0	0	9		62	
GAMMARUS	4	2	5			
HYALELLA AZTECA	2	0	2			
ALL AMPHIPODA					103	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 8 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED NO./SQ. METER
	1	2	3		
DIPTERA					
CHIRONOMIDAE	52	12	54		813
EPHEMEROPTERA					
CAENIDAE	2	0	2		
CAENIS					

EPHEMERIDAE					
HEXAGENIA	1	0	1		

ALL EPHEMEROPTERA					41
TRICHOPTERA					
LEPTOCERIDAE	2	0	0		
OCETIS					

ALL TRICHOPTERA					14
ACARINA	1	0	0		7
GASTROPODA					
AMNICOLA	14	2	12		

ELIMIA LIVESCENS	0	0	1		

GYRAULUS	4	1	1		

PHYSA	2	0	2		

VALVATA TRICARINATA	0	0	1		

ALL GASTROPODA					275
PELECYPODA					
SPHAERIIDAE	9	3	12		165
PISIDIUM					

ALL PELECYPODA					165

B-394

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 8/84
ST. CLAIR RIVER	TRANSECT 8	STATION 3	GRAB COUNTS			ESTIMATED
TAXON			1	2	3	NO./SQ. METER

CNIDARIA						
HYDRA			0	16	0	110

ALL CNIDARIA						110
RHABDOCOELA			21	26	53	689
NEMATODA			74	19	51	992
OLIGOCHAETA						
SPIROSPERMA			42	113	166	

OTHER						
ALL OLIGOCHAETA			846	848	620	18146
CLADOCERA						
DAPHNIA			0	1	0	

ILYOCRYPTUS			0	2	0	

ALL CLADOCERA						21
COPEPODA						
DIATOMUS			0	0	1	

HARPACTICOIDA			0	17	0	

ALL COPEPODA						124
AMPHIPODA						
GAMMARUS			15	19	3	

HYALELLA AZTECA			1	1	0	

PONTOPOREIA HOYI			0	1	0	

ALL AMPHIPODA						275

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ISOPODA					
ASELLUS	4	14	0		

LIRCEUS	0	2	0		

ALL ISOPODA					138
DIPTERA					
CERATOPOGONIDAE	0	3	1		
CHIRONOMIDAE	205	228	106		3712
ALL DIPTERA					3739
EPEMEROPTERA					
CAENIDAE					
CAENIS	15	16	1		

EPEMERIDAE					
HEXAGENIA	19	3	11		

ALL EPEMEROPTERA					448
LEPIDOPTERA	1	0	0		7
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	2	1	0		

LEPTOCERIDAE					
OECETIS	0	1	0		

TRIAENODES	1	1	0		

POLYCENTROPODIDAE					
NEURECLIPSIS	1	0	0		

POLYCENTROPUS	2	1	0		

ALL TRICHOPTERA					69
ODONATA					
GOMPHIDAE					
GOMPHUS	0	1	0		7

ALL ODONATA					7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 8/84
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	0	4	0	0	28
GASTROPODA					
LIMNICOLOA	10	37	37		

PHYSA	2	1	0		

VALVATA SINCERA	0	1	0		

ALL GASTROPODA					606
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	1	5	3		62

ALL PELECYPODA					62

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
ST. CLAIR RIVER	TRANSECT	9	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	17	17		234

ALL CNIDARIA					234
RHABDOCOELA	9	9	5		158
TRICLADIDA	1	0	1		14
NEMERTINEA	8	1	0		62
NEMATODA	26	58	80		1129
OLIGOCHAETA					
SPIROSPERMA	20	65	9		

OTHER	242	211	92		4401
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	159	318	363		5785

ALL POLYCHAETA					5785
COPEPODA					
LIMNOCALANUS	0	2	0		14

ALL COPEPODA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/15/84
TRANSECT 9 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	58	94	38	

HYALELLA AZTECA	24	31	20	

ALL AMPHIPODA				1825
ISOPODA				
ASELLUS	5	4	1	

LIRCEUS	9	23	16	

ALL ISOPODA				399
TERRESTRIAL INSECT				
	1	0	2	21
DIPTERA				
CERATOPOGONIDAE	29	21	74	
CHIRONOMIDAE	101	121	139	2486
ALL DIPTERA				3340
EPHEMEROPTERA				
CAENIDAE	34	26	67	
CAENIS				

EPHEMERIDAE				
HEXAGENIA	1	0	2	

EPHEMERELLIDAE				
EPHEMERELLA	0	0	1	

ALL EPHEMEROPTERA				902

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
TRANSECT 9 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
LEPTOCERIDAE					
MYSTACIDES					

OECETIS					

SETODES					

POLYCENTROPODIDAE					
POLYCENTROPUS					

ALL TRICHOPTERA					186
ACARINA					34
GASTROPODA					
AMNICOLA					

GYRAULUS					

PHYSA					

ALL GASTROPODA					76
PELECYPODA					
SPHAERIIDAE					
PISIDIUM					

SPHAERIUM					

ALL SPHAERIIDAE					193
ALL PELECYPODA					193

B-400

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
ST. CLAIR RIVER	TRANSECT	9	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA				0 0 1	7
HYDRA					
ALL CNIDARIA					7
NEMATODA				12 20 37	475
OLIGOCHAETA					
NAIS				0 0 1	
SPIROSPERMA				3 4 6	
OTHER				27 23 50	785
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA				0 2 5	48
ALL POLYCHAETA					48
CLADOCERA					
DAPHNIA				1 0 0	7
ALL CLADOCERA					7
COPEPODA					
CYCLOPS BICUSPIDATUS				0 2 0	
DIAPTOMUS				15 23 2	
LIMNOCALANUS				2 12 1	
ALL COPEPODA					393
AMPHIPODA					
GAMMARUS				1 6 8	
HYALELLA AZTECA				0 1 1	
ALL AMPHIPODA					117

B 401

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
TRANSECT 9 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3		NO./SQ. METER
DIPTERA					
CHIRONOMIDAE	6	7	14		186
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	2	1		

ALL EPHEMEROPTERA					21
ACARINA					
	0	2	1		21
GASTROPODA					
AMNICOLA					

ALL GASTROPODA	2	0	2		28
					28
PELECYPODA					
SPHAERIIDAE					
PISIDIUM					

ALL PELECYPODA	20	6	4		207
					207

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
ST. CLAIR RIVER	TRANSECT 9	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	2	0	0	14	
NEMATODA	6	29	8	296	
OLIGOCHAETA					
SPIROSPERMA	1	3	10		

OTHER	11	11	2	262	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	1	0	7	

ALL POLYCHAETA				7	
CLADOCERA					
DAPHNIA	1	0	0	7	

ALL CLADOCERA				7	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	0	7		

DIATOMUS	28	5	7		

EURYTEMORA	0	1	0		

HARPACTICOIDA	0	1	0		

LIMNOCALANUS	8	4	4		

ALL COPEPODA				455	
OSTRACODA	1	0	0	7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/15/84

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	3	0	2	34

ALL AMPHIPODA				34
DIPTERA				
CHIRONOMIDAE	6	4	5	103
GASTROPODA				
AMNICOLA	2	0	0	

ELIMIA LIVESCENS	1	0	0	

ALL GASTROPODA				21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	8	3	9	

SPHAERIUM	0	1	0	

ALL SPHAERIIDAE				145
ALL PELECYPODA				145

B 404

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/15/84
ST. CLAIR RIVER	TRANSECT 10 STATION 1			
TAXON		GRAB COUNTS		
		1	2	3
		ESTIMATED		
		NO./50. METER		
NEMATODA		1	0	1
		14		
OLIGOCHAETA		3	2	1
		41		
COPEPODA		0	1	0
CYCLOPS BICUSPIDATUS				
DIAPTOMUS		3	3	1
LIMNOCALANUS		11	7	10
ALL COPEPODA		248		
AMPHIPODA				
GAMMARUS		1	0	0
ALL AMPHIPODA		7		
TERRESTRIAL INSECT		1	0	1
		14		
UPTIERA				
CERATOPOGONIDAE		1	0	2
CHIRONOMIDAE		2	2	2
ALL DIPTERA		41		
		62		
PELECYPODA				
SPHAERIIDAE		3	2	0
PISIDIUM		34		
ALL PELECYPODA		34		

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
ST. CLAIR RIVER	TRANSECT 10 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
RHABDOCOELA		0	1	0	7
NEMATODA		10	24	11	310
HIRUDINEA					
GLOSSIPHONIIDAE					
GLOSSIPHONIA HETEROCLITA		1	0	0	
ALL HIRUDINEA					7
OLIGOCHAETA					
SPIROSPERMA		37	37	28	
OTHER		81	55	122	2479
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		2	21	2	172
ALL POLYCHAETA					172
CLADOCERA					
DAPHNIA		3	0	1	28
ALL CLADOCERA					28
COPEPODA					
CYCLOPS BICUSPIDATUS		1	0	3	
DIATOMUS		6	3	6	
LIMNOCALANUS		23	11	2	
ALL COPEPODA					379
OSTRACODA		1	0	0	7

B 406

MACROZOBENTHOS PONAR GRAB COUNT DATA				5/15/84
TRANSECT 10 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	0	1	7

ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	38	20	60	813
EPHEMEROPTERA				
CAENIDAE	0	1	0	
CAENIS				

ALL EPHEMEROPTERA				7
TRICHOPTERA				
LEPTOCERIDAE	1	0	0	
CERACLEA				

ALL TRICHOPTERA				7
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	15	8	2	

ELIMIA LIVESCENS	0	1	2	

GYRAULUS	2	0	0	

PHYSA	0	0	1	

ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	8	19	289

ALL PELECYPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
ST. CLAIR RIVER	TRANSECT 10	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCELA	1	1	0	14	
NEMATODA	12	20	33	448	
OLIGOCHAETA					
SPIROSPERMA	3	7	0		

OTHER					
ALL OLIGOCHAETA	38	78	25	1040	
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	0	3	21	

ALL POLYCHAETA				21	
CLADOCERA					
BOSMINA	1	0	0	7	

ALL CLADOCERA				7	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	0	1		

DIAPTOMUS	3	1	14		

LIMNOCALANUS	12	6	4		

ALL COPEPODA				289	
DIPTERA					
CHIRONOMIDAE	12	2	5	131	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	0	1		

ALL EPHEMEROPTERA				7	

B 408

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/15/84
TRANSECT 10 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS				
ALL TRICHOPTERA	0	1	0	7
GASTROPODA				
AMNICOLA	18	3	1	
GYRAULUS	0	1	0	
ALL GASTROPODA				158
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	4	2	158
ALL PELECYPODA				158

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
LAKE ST. CLAIR	TRANSECT 11 STATION 1				
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	3	0	2	34	
NEMATODA	96	47	40	1260	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	2	0	0		

ALL HIRUDINEA				14	
OLIGOCHAETA					
SPIROSPERMA	0	0	2		

OTHER					
ALL OLIGOCHAETA	234	129	37	2768	
POLYCHAETA					
MANAYUNKIA SPECIOSA	58	40	18	799	

ALL POLYCHAETA				799	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	0	3		

DIAPTOMUS	0	0	2		

HARPACTICOIDA	0	0	1		

LIMNOCALANUS	1	0	0		

ALL COPEPODA				48	
OSTRACODA	15	30	21	455	
AMPHIPODA					
GAMMARUS	9	27	8	303	

ALL AMPHIPODA				303	

B-410

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
TRANSECT 11 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TERRESTRIAL INSECT	1	0	0	7	
DIPTERA					
CHIRONOMIDAE	81	52	76	1439	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	129	92	126		

ALL EPHEMEROPTERA				2390	
TRICHOPTERA					
LEPTOCERIDAE	1	1	1		
OECETIS					

ALL TRICHOPTERA				21	
ACARINA	0	0	1	7	
GASTROPODA					
AMNICOLA	1	1	0		

ELIMIA LIVESCENS	1	0	0		

SOMATOGYRUS SUBGLOBOSUS	1	0	0		

VALVATA TRICARINATA	0	1	0		

ALL GASTROPODA				34	
PELECYPODA					
SPHAERIIDAE	46	13	4		
PISIDIUM					

SPHAERIUM	0	0	1		

ALL SPHAERIIDAE				441	
UNIONIDAE					
LAMPISILIS RADIATA SILIQUOIDEA	0	0	1		

ALL PELECYPODA				448	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
LAKE ST. CLAIR	TRANSECT 11 STATION 2				
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3		NO./SQ. METER
RHABDOCOELA	2	5	8		103
NEMATODA	109	168	210		3354
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	0	0	1		

ALL HIRUDINEA					7
OLIGOCHAETA	615	551	679		12706
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	24	0		165

ALL POLYCHAETA					165
CLADOCERA					
ILYOCRYPTUS	0	2	0		14

ALL CLADOCERA					14
OSTRACODA	3	8	19		207
AMPHIPODA					
GAMMARUS	5	4	3		

HYALELLA AZTECA	1	0	0		

ALL AMPHIPODA					90
DIPTERA					
CHIRONOMIDAE	36	50	24		758

B-412

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/15/84
TRANSECT 11 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	

EPHEMERIDAE				
HEXAGENIA	77	56	71	

ALL EPHEMEROPTERA				1412
TRICHOPTERA				
LEPTOCERIDAE				
DECETIS	0	0	1	

ALL TRICHOPTERA				7
ACARINA				
	0	1	0	7
GASTROPODA				
GYRAULUS	0	1	0	7

ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	61	36	88	1274

ALL PELECYPODA				1274

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
LAKE ST. CLAIR		TRANSECT 11 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	6	0	2	55	
NEMATODA	116	162	131	2817	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	2	1	0		
PISCICOLIDAE	0	1	0		
ALL HIRUDINEA				28	
OLIGOCHAETA					
SPIROSPERMA	0	0	1		
OTHER					
ALL OLIGOCHAETA	779	445	507	11928	
POLYCHAETA					
MANAYUNKIA SPECIOSA	16	32	33	558	
ALL POLYCHAETA				558	
CLADOCERA					
ILYOCRYPTUS	3	3	3	62	
ALL CLADOCERA				62	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	8	0		
DIAPTOMUS	0	8	0		
LIMNOCALANUS	0	2	0		
ALL COPEPODA				124	

B-414

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
TRANSECT 11 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	1	3	1		34
AMPHIPODA					
GAMMARUS	3	0	3		

HYALELLA AZTECA	0	2	0		

ALL AMPHIPODA					55
DIPTERA					
CHIRONOMIDAE	28	33	41		702
EPHEMEROPTERA					
CAENIDAE	0	0	1		
CAENIS					

EPHEMERIDAE					
HEXAGENIA	58	81	60		

ALL EPHEMEROPTERA					1377
TRICHOPTERA					
LEPTOCERIDAE					
DECETIS	1	0	0		

ALL TRICHOPTERA					7
ACARINA	1	1	0		14
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	59	101	21		

SPHAERIUM	3	8	2		

ALL SPHAERIIDAE					1336
ALL PELECYPODA					1336

B-415

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 4/84
LAKE ST. CLAIR	TRANSECT 12 STATION 1	GRAB COUNTS			ESTIMATED NO./SQ. METER	
		1	2	3		
TAXON		1	3	0	28	
RHABDOCELA		0	1	0	7	
TRICLADIDA		26	16	41	572	
NEMATODA						
OLIGOCHAETA		4	19	9		
SPIROSPERMA		20	27	56		
OTHER						
ALL OLIGOCHAETA					930	
POLYCHAETA						
MANAYUNKIA SPECIOSA		70	47	52	1164	
ALL POLYCHAETA					1164	
CLADOCERA						
DAPHNIA		0	2	0	14	
ALL CLADOCERA					14	
COPEPODA						
CYCLOPS VERNALIS		0	0	1		
DIAPTOMUS		0	1	1		
HARPACTICOIDA		1	3	1		
LIMNOCALANUS		1	4	5		
ALL COPEPODA					124	
OSTRACODA		9	22	22	365	

B-416

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/84
TRANSECT 12 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3	6	NO./SQ. METER
AMPHIPODA					
GAMMARUS	41	9	6		386
ALL AMPHIPODA					386
DIPTERA					
CHIRONOMIDAE	44	50	31		861
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	77	142	115		
ALL EPHEMEROPTERA					2300
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	2	4	1		
ALL TRICHOPTERA					48
GASTROPODA					
AMNICOLA	7	8	3		
ELIMIA LIVESCENS	0	1	0		
GYRAULUS	12	11	18		
VALVATA TRICARINATA	0	4	3		
ALL GASTROPODA					461
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	17	12	18		
SPHAERIUM	0	0	2		
ALL SPHAERIIDAE					337
ALL PELECYPODA					337

B-417

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
LAKE ST. CLAIR	TRANSECT 12 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
RHABDOCOELA		0	0	3	21
NEMATODA		15	15	69	682
OLIGOCHAETA					
SPIROSPERMA		0	1	2	

OTHER		62	108	233	2796
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		5	11	10	179

ALL POLYCHAETA					179
COPEPODA					
CYCLOPS VERNALIS		0	1	1	

DIAPTOMUS		0	1	7	

HARPACTICOIDA		0	0	3	

LIMNOCALANUS		9	2	10	

ALL COPEPODA					234
OSTRACODA					

ALL OSTRACODA		0	1	2	21
AMPHIPODA					
GAMMARUS		7	2	10	131

ALL AMPHIPODA					131
DIPTERA					
CHIRONOMIDAE		23	60	68	1040

B-418

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
TRANSECT 12 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	0	1		
EPHEMERIDAE					
HEXAGENIA	82	99	94		
ALL EPHEMEROPTERA					1901
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	5	1	5		76
ALL TRICHOPTERA					
ACARINA	1	0	0		7
GASTROPODA					
AMNICOLA	1	3	5		
ELIMIA LIVESCENS	0	1	2		
GYRAULUS	1	0	2		
ALL GASTROPODA					103
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	14	30	38		
SPHAERIUM	0	0	1		
ALL SPHAERIIDAE					572
ALL PELECYPODA					572

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
LAKE ST. CLAIR		TRANSECT 12 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICLADIDA	0	1	0	7	
NEMATODA	12	63	21	661	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	0	1	1		
HELOBDELLA STAGNALIS	0	1	0		
ALL HIRUDINEA				21	
OLIGOCHAETA					
SPIROSPERMA	1	3	3		
OTHER					
ALL OLIGOCHAETA	149	383	103	4421	
POLYCHAETA					
MANAYUNKIA SPECIOSA	5	25	9	269	
ALL POLYCHAETA				269	
COPEPODA					
CYCLOPS VERNALIS	0	1	0		
DIAPYCNUS	9	5	2		
HARPACTICOIDA	0	12	3		
LIMNOCALANUS	8	3	1		
ALL COPEPODA				303	
OSTRACODA	0	4	0	28	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/15/84
TRANSECT 12 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	1	12	2		103
ALL AMPHIPODA					103
ISOPODA					
ASELLUS	0	1	0		7
ALL ISOPODA					7
TERRESTRIAL INSECT					
DIPTERA					
CHIRONOMIDAE	31	62	46		957
EPEMEROPTERA					
EPEMERIDAE	91	71	79		
HEXAGENIA					
ALL EPEMEROPTERA					1660
TRICHOPTERA					
LEPTOCERIDAE					
DECEITIS	1	5	1		48
ALL TRICHOPTERA					14
ACARINA	2	0	0		
GASTROPODA					
AMNICOLA	0	2	0		
GYRAULUS	0	7	3		
VALVATA TRICARINATA	0	1	1		
ALL GASTROPODA					96

B-421

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/15/84
TRANSECT 12 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	18	64	16	675

ALL PELECYPODA				675

B-427

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/84
LAKE ST. CLAIR	TRANSECT 13 STATION 1				
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
RHABDOCELA		0	0	1	7
NEMATODA		12	30	12	372
OLIGOCHAETA		18	33	22	503
POLYCHAETA					
MANAYUNKIA SPECIOSA		9	0	1	69
ALL POLYCHAETA					69
COPEPODA					
CYCLOPS BICUSPIDATUS		1	1	0	
DIAPTOMUS		2	3	6	
HARPACTICOIDA		4	7	0	
LIMNOCALANUS		1	0	0	
ALL COPEPODA					172
OSTRACODA		6	6	7	131
AMPHIPODA					
GAMMARUS		2	7	4	90
ALL AMPHIPODA					90
DIPTERA					
CHIRONOMIDAE		17	43	29	613

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/84
TRANSECT 13 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	91	91	87		1853
ALL EPHEMEROPTERA					
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	4	5	1		69
ALL TRICHOPTERA					
ACARINA	1	0	0		7
GASTROPODA					
ANNICOLA	3	3	6		
ELIMIA LIVESCENS	0	1	0		
GYRAULUS	3	0	0		
VALVATA TRICARINATA	0	1	0		
ALL GASTROPODA					117
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	6	33	17		
SPHAERIUM	0	1	0		
ALL SPHAERIIDAE					393
ALL PELECYPODA					393

MACROZOOBENTHOS PONAR GRAB COUNT DATA							5/ 4/84
LAKE ST. CLAIR		TRANSECT 13		STATION 2			
TAXON		GRAB COUNTS			ESTIMATED		
		1	2	3	NO./SQ. METER		
CNIDARIA							
HYDRA		1	0	0		7	
ALL CNIDARIA						7	
RHABDOCOELA		1	0	3		28	
NEMATODA		62	16	27		723	
OLIGOCHAETA							
SPIROSPERMA		3	0	1			
OTHER							
ALL OLIGOCHAETA		350	165	102		4277	
POLYCHAETA							
MANAYUNKIA SPECIOSA		5	2	5		83	
ALL POLYCHAETA						83	
COPEPODA							
CYCLOPS BICUSPIDATUS		3	0	2			
DIAPTOMUS		1	0	3			
HARPACTICOIDA		4	0	5			
ALL COPEPODA						124	
OSTRACODA		4	1	4		62	
AMPHIPODA							
GAMMARUS		34	3	13			
HYALELLA AZTECA		1	0	0			
ALL AMPHIPODA						351	

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/84

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA				
GERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	62	35	49	1005
ALL DIPTERA				1012
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	69	74	107	
ALL EPHEMEROPTERA				1729
TRICHOPTERA				
LEPTOCERIDAE				
DECETIS	0	1	5	
ALL TRICHOPTERA				41
ACARINA				
ALL ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	7	0	0	
ELIMIA LIVESCENS	1	0	0	
GYRAULUS	4	8	0	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	38	27	21	
SPHAERIUM	1	5	3	
ALL SPHAERIIDAE				654
ALL PELECYPODA				654

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 4/84
LAKE ST. CLAIR		TRANSECT 13 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	0	0	1	7	
NEMATODA	1	22	21	303	
OLIGOCHAETA	21	83	67	1178	
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	5	2	48	
ALL POLYCHAETA				48	
COPEPODA					
DIAPTOMUS	0	2	2		
EPISHURA LACUSTRIS	0	1	0		
HARPACTICOIDA	0	9	1		
LIMNOCALANUS	0	3	0		
ALL COPEPODA				124	
OSTRACODA	0	0	6	41	
AMPHIPODA					
GAMMARUS	3	5	11	131	
ALL AMPHIPODA				131	
DIPTERA					
CHIRONOMIDAE	12	20	24	386	

B-427

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 4/84
TRANSECT 13 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA					

ALL EPHEMEROPTERA	86	73	85		1680
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	3	1	3		

ALL TRICHOPTERA					48
GASTROPODA					
AMNICOLA	1	0	4		

ELIMIA LIVESCENS	0	1	1		

GYRAULUS	0	0	4		

ALL GASTROPODA					76
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	4	6	18		

SPHAERIUM	1	0	1		

ALL SPHAERIIDAE					207
ALL PELECYPODA					207

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
DETROIT RIVER		TRANSECT 14 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA					
SPONGILLA	+	+	+		+
ALL PORIFERA					0
NEMATODA					
	0	1	0		7
OLIGOCHAETA					
NAIS	7	2	5		

SPIROSPERMA	0	6	0		

OTHER					
ALL OLIGOCHAETA	24	35	28		737
POLYCHAETA					
MANAYUNKIA SPECIOSA	1	2	1		28

ALL POLYCHAETA					28
COPEPODA					
CYCLOPS BICUSPIDATUS	7	4	1		

DIAPTOMUS	27	24	20		

HARPACTICOIDA	0	0	1		

LIMNOCALANUS	2	5	2		

ALL COPEPODA					640
OSTRACODA					
	0	3	1		28
DIPTERA					
CERATOPOGONIDAE	0	0	1		
CHIRONOMIDAE	3	2	5		69
ALL DIPTERA					76

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 3/84
TRANSECT 14 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
BAETISCIDAE	1	0	0	
BAETISCA				7

ALL EPHEMEROPTERA				7
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	3	4	18	

ELIMIA LIVESCENS	16	21	27	

ALL GASTROPODA				613
PELECYPODA				
SPHAERIIDAE	15	12	21	
PISIDIUM				

SPHAERIUM	3	4	6	

ALL SPHAERIIDAE				420
UNIONIDAE	1	0	0	
ALL PELECYPODA				427

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/ 3/84	
DETROIT RIVER	TRANSECT 14 STATION 2		
TAXON	GRAB COUNTS	ESTIMATED	
	1 2 3	NO./SQ. METER	
PORIFERA			
SPONGILLA			
ALL PORIFERA	0 + +		+
CNIDARIA			
HYDRA			0
ALL CNIDARIA	0 0 11		76
TRICLADIDA			76
NEMERTINEA	0 0 6		41
NEMATODA	0 2 3		34
OLIGOCHAETA	3 5 6		96
NATS			
SPIROSPERMA	0 0 6		
OTHER	0 1 1		
ALL OLIGOCHAETA	28 18 24		537
POLYCHAETA			
MANAYUNKIA SPECIOSA	21 11 19		351
ALL POLYCHAETA			351

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS VERNALIS	2	1	0	
DIAPTOMUS	30	15	16	
HARPACTICOIDA	1	0	0	
LIMNOCALANUS	2	2	4	
UNIDENTIFIED NAUPLII	0	1	0	
ALL COPEPODA				510
OSTRACODA				
DIPTERA				
CERATOPOGONIDAE	1	2	1	
CHIRONOMIDAE	7	5	7	131
ALL DIPTERA				158
TRICHOPTERA				
HYDROPSYCHIDAE	4	0	15	
CHEUMATOPSYCHE				
HYDROPSYCHE	0	0	1	
ALL TRICHOPTERA				138
GASTROPODA				
AMNICOLA	7	2	3	
ELIMIA LIVESCENS	12	11	7	
ALL GASTROPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
TRANSECT 14 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM					

SPHAERIUM					

ALL SPHAERIIDAE					588
UNIONIDAE					
ALL PELECYPODA	1	0	0		606

B-433

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
DETROIT RIVER		TRANSECT 14 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH	1	0	0	7	
FISH EGGS				7	

ALL FISH					
CNIDARIA	33	0	8	282	
HYDRA				282	

ALL CNIDARIA					
RHABDOCOELA	2	1	8	76	
TRICLADIDA	2	0	1	21	
NEMERTINEA	59	177	42	1914	
NEMATODA	30	37	27	647	
OLIGOCHAETA	2	2	0		
BRANCHIURA					

SPIROSPERMA	213	154	134		

OTHER	215	247	236	8285	
ALL OLIGOCHAETA					
POLYCHAETA	53	262	258	3946	
MANAYUNKIA SPECIOSA				3946	

ALL POLYCHAETA					

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
TRANSECT 14 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
ILYOCRYPTUS		2	0	0	14

ALL CLADOCERA					14
COPEPODA					
DIAPTOMUS		9	0	9	

LIMNOCALANUS		0	8	1	

MESOCYCLOPS		0	0	1	

ALL COPEPODA					193
OSTRACODA					
1994	267	387			18236
AMPHIPODA					
GAMMARUS		14	0	1	

HYALELLA AZTECA		2	0	1	

ALL AMPHIPODA					124
TERRESTRIAL INSECT					
1	0	0	0		7
DIPTERA					
CERATOPOGONIDAE		0	2	0	
CHIRONOMIDAE		94	19	62	1205
ALL DIPTERA					1219
Ephemeroptera					
EPHEMERIDAE					
HEXAGENIA		6	6	8	

ALL EPHEMEROPTERA					138

B-435

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
TRANSECT 14 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPSYCHIDAE	15	0	0		
CHEMATOPSYCHE					
LEPTOCERIDAE	0	1	0		
CERACLEA					
ALL TRICHOPTERA				110	
ACARINA	9	1	0	69	
GASTROPODA					
ANNICOLA	1	6	8		
BITHYNIA	1	0	0		
ELIMIA LIVESCENS	6	9	2		
PHYSA	2	0	0		
ALL GASTROPODA				241	
PELECYPODA					
SPHAERIIDAE	34	52	26		
PISIDIUM	34	36	23		
SPHAERIUM				1412	
ALL SPHAERIIDAE					
UNIONIDAE	0	1	1		
LAMPISILIS	1	0	0		
TRUNCILLA	0	6	0		
OTHER					
ALL PELECYPODA				1474	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
DETROIT RIVER		TRANSECT 15 STATION 1			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		7	3	3	90

ALL CNIDARIA					90
TRICLADIDA		0	1	0	7
NEMERTINEA		3	1	2	41
NEMATODA		3	33	11	324
OLIGOCHAETA					
SPIROSPERMA		11	1	4	

OTHER		24	18	12	
ALL OLIGOCHAETA					482
COPEPODA					
CYCLOPS BICUSPIDATUS		1	1	4	

DIATOMUS		10	1	10	

LIMNOCALANUS		1	0	0	

ALL COPEPODA					193
OSTRACODA		4	1	4	62
AMPHIPODA					
GAMMARUS		1	1	1	21

ALL AMPHIPODA					21

B-437

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA				
CHIRONOMIDAE	1	2	2	34
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	3	

ALL TRICHOPTERA				34
GASTROPODA				
AMNICOLA	1	5	1	

ELIMIA LIVESCENS	2	9	3	

ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	8	5	158

UNIONIDAE				
LAMPISILIS RADIATA SILIQUIDIDEA	1	0	0	

ALL PELECYPODA				165

B-438

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/ 3/84		
DETROIT RIVER	TRANSECT 15 STATION 2			
TAXON		GRAB COUNTS		
		1	2	3
FISH				ESTIMATED NO./SQ. METER
FISH EGGS		0	0	1
ALL FISH				7
CNIDARIA				
HYDRA				
ALL CNIDARIA		292	101	15
				2810
RHABDOCOELA		0	3	0
				21
TRICLADIDA		20	12	0
				220
NEMERTINEA		8	5	3
				110
NEMATODA		49	14	50
				778
OLIGOCHAETA				
SPIROSPERMA		1	6	3
OTHER				
ALL OLIGOCHAETA		24	22	38
				647
COPEPODA				
CYCLOPS BICUSPIDATUS		8	0	1
DIAPTOMUS		1	1	9
EUCYCLOPS		0	0	4
LIMNOCALANUS		0	2	0
ALL COPEPODA				179

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

TRANSECT 15 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OSTRACODA	16	39	1	386
AMPHIPODA				
GAMMARUS	2	2	0	28

ALL AMPHIPODA				28
DIPTERA				
CHIRONOMIDAE	10	4	7	145
EPHEMEROPTERA				
EPHEMERIDAE	0	1	0	
HEXAGENIA				

BAETISCIDAE				
BAETISCA	10	11	0	

HEPTAGENIIDAE				
STENONEMA	2	0	0	

ALL EPHEMEROPTERA				165
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	175	68	5	

HYDROPSYCHE	69	9	0	

LEPTOCERIDAE				
CERACLEA	2	0	0	

ALL TRICHOPTERA				2259
ACARINA				

ALL ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	4	8	4	

ELIMIA LIVESCENS	107	31	9	

ALL GASTROPODA				1123

B-440

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 3/84
TRANSECT 15 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	25	20	

SPHAERIUM	0	2	0	

ALL SPHAERIIDAE				393
ALL PELECYPODA				393

B-441

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
DETROIT RIVER		TRANSECT 15 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
FISH					
FISH EGGS		0	1	0	7
ALL FISH					7
CNIDARIA					
HYDRA		1	0	1	14
ALL CNIDARIA					14
NEMERTINEA		1	2	0	21
NEMATODA		14	0	16	207
OLIGOCHAETA					
SPIROSPERMA		1	8	0	
OTHER		1	22	0	220
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		2	2	0	28
ALL POLYCHAETA					28
CLADOCERA					
DAPHNIA		0	0	1	7
ALL CLADOCERA					7
COPEPODA					
CYCLOPS BICUSPIDATUS		1	2	0	
DIAPTOMUS		1	2	16	
LIMNOCALANUS		0	3	3	
ALL COPEPODA					193

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
TRANSECT 15 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	0	6	1	48	
DIPTERA					
CHIRONOMIDAE	0	4	3	48	
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	3	2	1		

BAETISCIDAE					
BAETISCA	1	0	0		

ALL EPHEMEROPTERA				48	
TRICHOPTERA					
HYDROPSYCHIDAE					
HYDROPSYCHE	0	0	1		

LEPTOCERIDAE					
OECETIS	0	0	1		

ALL TRICHOPTERA				14	
GASTROPODA					
ELIMIA LIVESCENS	0	1	0	7	

ALL GASTROPODA				7	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	1	8	12		

SPHAERIUM	0	0	4		

ALL SPHAERIIDAE				172	
ALL PELECYPODA				172	

B-447

MACROZOOBENTHOS PONAR GRAB COUNT DATA					
DETROIT RIVER					5/ 3/84
TRANSECT 16 STATION 1					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	32	8	17		393
ALL CNIDARIA					393
RHABDOCOELA	8	5	2		103
NEMATODA	260	101	218		3987
HIRUDINEA					
ERPOBDELLIDAE	1	0	3		
GLOSSIPHONIIDAE	0	2	0		
GLOSSIPHONIA HETEROCLITA					
HELOBDELLA ELONGATA	0	0	5		
HELOBDELLA STAGNALIS	0	0	1		
ALL HIRUDINEA					83
OLIGOCHAETA					
NAIS	24	0	8		
SPIROSPERMA	2	2	0		
OTHER					
ALL OLIGOCHAETA	1206	415	1242		19964
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	0	16		110
ALL POLYCHAETA					110

B-444

5/ 3/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	0	

DIAPTOMUS	16	10	0	

HARPACTICOIDA	51	42	195	

PARACYCLOPS	0	0	16	

ALL COPEPODA				2279
OSTRACODA				
447	60	421		6391
AMPHIPODA				
GAMMARUS	12	12	8	

HYALELLA AZTECA	263	105	78	

ALL AMPHIPODA				3282
ISOPODA				
ASELLUS	1	1	2	28

ALL ISOPODA				28
DIPTERA				
CERATOPOGONIDAE	15	7	10	
CHIRONOMIDAE	841	500	711	14131
ALL DIPTERA				14352
EPHEMEROPTERA				
CAENIDAE	1	0	4	
CAENIS				

ALL EPHEMEROPTERA				34
LEPIDOPTERA				
3	1	1		34

11-445

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
CHELMATOPSYCHE				
HYDROPSYCHE	2	3	0	
LEPTOCERIDAE	1	0	0	
OECETIS	0	1	1	
TRIAENODES	1	0	0	
ALL TRICHOPTERA				62
ACARINA	1	1	0	14
GASTROPODA				
AMNICOLA	11	2	9	
GYRAULUS	1	2	0	
PHYSA	4	1	1	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	14
ALL PELECYPODA				14

13-446

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
DETROIT RIVER		TRANSECT 16 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	

FISH					
FISH EGGS	1	1	0	14	

ALL FISH				14	

CNIDARIA					
HYDRA	0	5	12	117	

ALL CNIDARIA				117	

RHABDOCOELA	7	9	7	158	

TRICLADIDA	0	0	2	14	

NEMERTINEA	8	0	14	152	

NEMATODA	171	179	264	4228	

HIRUDINEA					
ERPOBDELLIDAE	1	0	1		

GLOSSIPHONIIDAE	0	1	0		
HELOBDELLA ELONGATA					

ALL HIRUDINEA				21	

OLIGOCHAETA					
SPIROSPERMA	10	2	11		

OTHER	129	146	88		
ALL OLIGOCHAETA				2658	

B-447

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	1	0	14
ALL POLYCHAETA				14
COPEPODA				
CYCLOPS BICUSPIDATUS	8	17	9	
DIAPTOMUS	8	16	0	
HARPACTICOIDA	24	82	0	
MESOCYCLOPS	8	16	8	
ALL COPEPODA				1350
OSTRACODA	39	84	131	1748
AMPHIPODA				
GAMMARUS	5	3	4	
HYALELLA AZTECA	9	1	4	
ALL AMPHIPODA				178
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CERATOPOGONIDAE	20	28	27	
CHIRONOMIDAE	65	44	63	
ALL DIPTERA				1185 1701

B-448

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
TRANSECT 16 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	19	2	4		
EPHEMERIDAE					
HEXAGENIA	20	11	28		
ALL EPHEMEROPTERA				578	
LEPIDOPTERA					
	0	0	2	14	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	1	0	1		
HYDROPSYCHE	1	0	0		
HYDROPTILIDAE					
ORTHOTRICHIA	1	0	0		
LEPTOCERIDAE					
NECTOPSYCHE	1	0	0		
POLYCENTROPODIDAE					
PHYLOCENTROPUS	3	3	3		
ALL TRICHOPTERA				96	
ACARINA					
	1	2	0	21	
GASTROPODA					
AMNICOLA	18	18	14		
GYRAULUS	1	0	0		
PHYSA	0	1	0		
PLEUROCERA ACUTA	5	5	2		
ALL GASTROPODA				441	

B-449

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	26	13	47	

SPHAERIUM	2	6	3	

ALL SPHAERIIDAE				668
UNIONIDAE	0	1	1	
ALL PELECYPODA				682

B = 450

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
DETROIT RIVER		TRANSECT 16 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
FISH					
FISH EGGS	1	2	1		28

ALL FISH					28
CNIDARIA					
HYDRA	23	0	4		186

ALL CNIDARIA					186
RHABDOCOELA	7	0	1		55
TRICLADIDA	1	0	1		14
NEMATODA	31	20	43		647
OLIGOCHAETA					
SPIROSPERMA	2	3	0		

OTHER	178	231	104		3567
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	10	16	0		179

ALL POLYCHAETA					179
CLADOCERA					
DAPHNIA	0	8	1		62

ALL CLADOCERA					62

B-451

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
DIATOMUS	8	8	3	

LIMNOCALANUS	0	0	1	

MACROCYCLOPS	0	1	0	

ALL COPEPODA				145
OSTRACODA	34	26	57	806
AMPHIPODA				
GAMMARUS	39	10	8	

HYALELLA AZTECA	6	1	2	

ALL AMPHIPODA				455
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CERATOPOGONIDAE	1	2	0	
CHIRONOMIDAE	46	51	15	771
EMPIDIDAE	1	0	0	
ALL DIPTERA				799
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	9	2	1	

EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	

BAETISCIDAE				
BAETISCA	1	1	0	

ALL EPHEMEROPTERA				103

B-452

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 3/84
TRANSECT 16 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPSYCHIDAE	5	0	0		
CHEMATOPSYCHE					
HYDROPSYCHE	1	0	0		
HYDROPTILIDAE					
HYDROPTILA	0	0	1		
ALL TRICHOPTERA					48
ACARINA	4	2	8		96
GASTROPODA					
AMNICOLA	6	0	2		
GYRAULUS	1	0	2		
PLEUROCERA ACUTA	1	0	0		
ALL GASTROPODA					83
PELECYPODA					
SPHAERIIDAE	10	17	5		220
PISIDIUM					
UNIONIDAE					
ELLIPTIO DILATATUS	1	0	0		
LAMPISILIS VENTRICOSA	1	0	0		
PTYCHOBRAUCHUS FASCIOLARIA	0	1	0		
ALL PELECYPODA					241

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 2/84
DETROIT RIVER		TRANSECT 17 STATION 1				
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		

CNIDARIA						
HYDRA						

ALL CNIDARIA	22	23	178	1536		
				1536		
RHABDOCOELA						
	5	7	2	96		
TRICLADIDA						
	0	1	0	7		
NEWERTINEA						
	4	0	1	34		
NEMATODA						
	96	194	212	3457		
HIRUDINEA						
ERPOBDELLIDAE						
	3	2	2			
GLOSSIPHONIIDAE						
GLOSSIPHONIA METEROCLITA						

ALL HIRUDINEA				55		
OLIGOCHAETA						
NAIS						

SPIROSPERMA						

OTHER						
	22	6	7			
ALL OLIGOCHAETA	686	836	693	15509		
POLYCHAETA						
MANAYUNKIA SPECIOSA						

ALL POLYCHAETA	1	0	0	7		
				7		

R-454

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	0	
DIAPYCNUS	1	8	9	
HARPACTICOIDA	48	40	19	
LIMNOCALANUS	1	2	0	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				943
OSTRACODA	1	3	0	28
AMPHIPODA				
GAMMARUS	4	4	3	
HYALELLA AZTECA	0	2	3	
ALL AMPHIPODA				110
ISOPODA				
AELLUS	2	0	0	
LIRCEUS	1	0	0	
ALL ISOPODA				21
DIPTERA				
CERATOPOGONIDAE	6	12	4	
CHIRONOMIDAE	60	48	38	1012
ALL DIPTERA				1164
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	3	0	
ALL EPHEMEROPTERA				28

B-455

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
TRANSECT 17 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	0	1	0		
HYDROPSYCHE	0	1	0		
ALL TRICHOPTERA					14
GASTROPODA					
ANNICOLA	22	8	33		
ELIMIA LIVESCENS	0	0	3		
GYRAULUS	2	0	4		
PHYSA	1	0	0		
PLEUROCERA ACUTA	1	0	0		
ALL GASTROPODA					510
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	16	1	39		
SPHAERIUM	1	0	8		
ALL SPHAERIIDAE					448
ALL PELECYPODA					448

B-456

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
DETROIT RIVER		TRANSECT 17 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	

CNIDARIA					
HYDRA	22	238	81	2348	

ALL CNIDARIA				2348	
RHABDOCOELA	1	0	8	62	
TRICLADIDA	0	1	0	7	
NEMERTINEA	2	3	8	90	
NEMATODA	90	218	125	2982	
OLIGOCHAETA					
SPIROSPERMA	3	14	49		

OTHER	143	404	306	6329	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	64	163	41	1846	

ALL POLYCHAETA				1846	
COPEPODA					
DIAPTOMUS	1	24	0		

HARPACTICOIDA	0	41	0		

LIMNOCALANUS	2	0	0		

ALL COPEPODA				468	

B-457

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS				ESTIMATED NO./SQ. METER
	1	2	3		
OSTRACODA	20	10	26		386
AMPHIPODA					
GAMMARUS	6	2	2		

HYALELLA AZTECA	10	1	0		

ALL AMPHIPODA					145
DIPTERA					
CERATOPOGONIDAE	3	5	1		
CHIRONOMIDAE	62	64	74		1377
EMPIDIDAE	0	1	0		
ALL DIPTERA					1446
EPHEMEROPTERA					
CAENIDAE					
CAENIS	1	3	2		

EPHEMERIDAE					
HEXAGENIA	13	9	4		

BAETISCIDAE					
BAETISCA	1	0	0		

ALL EPHEMEROPTERA					227
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	2	1		

HYDROPSYCHE	1	0	0		

LEPTOCERIDAE					
OECETIS	4	4	8		

TRIAENODES	0	1	0		

ALL TRICHOPTERA					145

B-458

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
TRANSECT 17 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	5	10	11		178
GASTROPODA					
AMNICOLA	8	8	4		
ELIMIA LIVESCENS	0	2	3		
PLEUROCERA ACUTA	4	2	1		
ALL GASTROPODA					220
PELECYPODA					
SPHAERIIDAE	3	19	9		
PISIDIUM					
SPHAERIUM	1	15	2		
ALL SPHAERIIDAE					337
ALL PELECYPODA					337

B-459

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
DETROIT RIVER		TRANSECT 17 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		65	35	141	1660
HYDRA					

ALL CNIDARIA					1660
RHABDOCOELA		1	0	0	7
NEMERTINEA		2	2	7	76
NEMATODA		32	40	28	689
OLIGOCHAETA					
SPIROSPERMA		37	17	22	

OTHER		31	11	34	
ALL OLIGOCHAETA					1047
POLYCHAETA					
MANAYUNKIA SPECIOSA		83	323	80	3347

ALL POLYCHAETA					3347
COPEPODA					
CYCLOPS BICUSPIDATUS		0	1	0	

DIAPTOMUS		0	3	0	

LIMNOCALANUS		1	1	0	

ALL COPEPODA					41
OSTRACODA		24	13	5	289

B-460

5/ 2/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	5	0	1	

HYALELLA AZTECA	1	0	1	

ALL AMPHIPODA				55
TERRESTRIAL INSECT				
1	0	0	0	7
DIPTERA				
CHIRONOMIDAE	3	2	4	62
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	

EPHEMERIDAE				
HEXAGENIA	0	0	1	

BAETISCIDAE				
BAETISCA	3	0	1	

ALL EPHEMEROPTERA				41
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	1	8	

ALL TRICHOPTERA				62
ACARINA				
0	1	2	21	
GASTROPODA				
AMNICOLA	5	6	2	

ELIMIA LIVESCENS	1	0	0	

PLEUROCERA ACUTA	1	0	0	

ALL GASTROPODA				103

B-461

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	9	3	6	

SPHAERIUM	2	1	5	

ALL SPHAERIIDAE				179
ALL PELECYPODA				179

B-462

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
DETROIT RIVER	TRANSECT 18 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
FISH					
ETHEOSTOMA NIGRUM		1	0	0	7
ALL FISH					7
RHABDOCOELA		9	1	6	110
TRICLADIDA		14	5	4	158
NEMERTINEA		10	0	16	179
NEMATODA		59	1	89	1026
OLIGOCHAETA					
NAIS		24	0	0	
SPIROSPERMA		31	35	17	
OTHER		2423	3045	2945	58674
ALL OLIGOCHAETA					
COPEPODA					
CYCLOPS BICUSPIDATUS		0	0	1	
DIAPTOMUS		43	0	0	
LIPOCALANUS		3	32	1	
ALL COPEPODA					551
OSTRACODA		1	0	0	7

B-463

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 1/84

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	4	1	18	

HYALELLA AZTECA	1	3	0	

ALL AMPHIPODA				193
DIPTERA				
CHIRONOMIDAE	40	4	13	393
EMPIDIDAE	0	0	1	
ALL DIPTERA				399
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
HYDROPSYCHIDAE	1	0	0	
CHEMATOPSYCHE				

HYDROPSYCHE	3	0	0	

HYDROPTILIDAE	1	0	0	
HYDROPTILA				

POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	

ALL TRICHOPTERA				41
ODONATA				
COENAGRIONIDAE	2	0	1	21
ACARINA	12	0	3	103
TARDIGRADA	8	0	0	55

B-464

MACROZOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
TRANSECT 18 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	7	0	6		
ELIMIA LIVESCENS	3	1	2		
FERISSIA	9	4	3		
GYRAULUS	3	0	0		
PHYSA	14	8	15		
ALL GASTROPODA				516	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	2	0	2		28
ALL PELECYPODA					28

B-465

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
DETROIT RIVER		TRANSECT 18 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		0	1	0	7

ALL CNIDARIA					7
RHABDOCOELA		0	0	1	7
TRICLADIDA		1	0	1	14
NEMATODA		18	1	64	572
OLIGOCHAETA					
SPIROSPERMA		3	5	32	

OTHER		415	891	1571	20088
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	0	96	661

ALL POLYCHAETA					661
COPEPODA					
CYCLOPS BICUSPIDATUS		0	17	3	

DIAPTOMUS		0	16	1	

ALL COPEPODA					255
DIPTERA					
CHIRONOMIDAE		3	1	3	48

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
TRANSECT 18 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	0	2	3	34	
TARDIGRADA	16	0	0	110	
GASTROPODA					
AMNICOLA	3	0	1		
ELIMIA LIVESCENS	0	1	0		
FERISSIA	0	16	0		
PHYSA	1	0	1		
ALL GASTROPODA				158	
PELECYPODA					
SPHAERIIDAE	0	0	1		7
PISIDIUM					
ALL PELECYPODA					7

B-467

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 1/84
DETROIT RIVER		TRANSECT 18 STATION 3		
TAXON		GRAB COUNTS		
		1	2	3
		ESTIMATED		
		NO./SQ. METER		
CNIDARIA				
HYDRA		64	0	0
----				441
ALL CNIDARIA				441
RHABDOCOELA		1	2	1
NEMATODA		0	0	1
OLIGOCHAETA				7
NAIS		132	0	192

SPIROSPERMA		71	5	41

OTHER				
ALL OLIGOCHAETA		4263	1217	5728
				80223
POLYCHAETA				
MANAYUNKIA SPECIOSA		0	64	0
-----				441
ALL POLYCHAETA				441
COPEPODA				
LIMNOCALANUS		0	2	1
-----				21
ALL COPEPODA				21
OSTRACODA		1	0	0
AMPHIPODA				7
GAMMARUS		1	0	0

HYALELLA AZTECA		2	0	0

ALL AMPHIPODA				21

B-468

5/ 1/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 18 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA				
CHIRONOMIDAE	29	2	1	220
PSYCHODIDAE	11	0	0	
ALL DIPTERA				296
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	

ALL EPHEMEROPTERA				7
LEPIDOPTERA				
	5	0	0	34
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	3	0	0	

HYDROPSYCHE	3	0	0	

HYDROPTILIDAE				
ORTHOTRICHIA	1	0	0	

LEPTOCERIDAE				
TRIAENODES	1	0	0	

POLYCENTROPIDIDAE				
POLYCENTROPUS	2	0	0	

ALL TRICHOPTERA				69
ODONATA				
COENAGRIONIDAE	3	0	0	21
ACARINA	10	0	4	96

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
TRANSECT 18 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	1	0	0		
ELIMIA LIVESCENS	0	0	2		
FERISSIA	5	0	0		
PHYSA	1	0	0		
VALVATA SINCERA	0	0	1		
ALL GASTROPODA					69
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	0	5	21		178
ALL PELECYPODA					178

B-470

5/ 1/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

DETROIT RIVER	TRANSECT 19 STATION 1	GRAB COUNTS			ESTIMATED NO./SQ. METER
		1	2	3	
TAXON					
RHABDOCOELA		31	40	21	634
TRICLADIDA		2	6	1	62
NEMERTINEA		19	13	5	255
NEMATODA		144	96	28	1846
OLIGOCHAETA					
SPIROSPERMA		194	319	40	
OTHER					
ALL OLIGOCHAETA		1545	2497	3102	53007
POLYCHAETA					
MANAYUNKIA SPECIOSA		17	32	66	792
ALL POLYCHAETA					792
COPEPODA					
CYCLOPS BICUSPIDATUS		0	0	2	
DIAPTOMUS		0	16	0	
HARPACTICOIDA		16	0	0	
LIMNOCALANUS		0	0	1	
ALL COPEPODA					241
OSTRACODA		2	0	0	14

B-471

MACROZOBENTHOS PONAR GRAB COUNT DATA

5/ 1/84

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS				ESTIMATED NO./SQ. METER
	1	2	3	4	
AMPHIPODA					
GAMMARUS					
ALL AMPHIPODA	3	10	4		117
DIPTERA					
CERATOPOGONIDAE					
CHIRONOMIDAE	14	19	2		
EMBIIDAE	4	3	0		48
PSYCHODIDAE	1	0	0		
ALL DIPTERA	1	0	0		303
EPEMEROPTERA					
CAENIDAE					
CAENIS	0	2	0		
EPEMERIDAE					
HEXAGENIA	1	1	2		
ALL EPEMEROPTERA					41
LEPIDOPTERA					
TRICHOPTERA	1	1	0		14
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	1		
HYDROPTILIDAE					
ORTHOTRICHIA	0	2	0		
ALL TRICHOPTERA					21
ACARINA					
ALL ACARINA	14	63	2		544

B-472

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
TRANSECT 19 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	7	12	11		
ELIMIA LIVESCENS	0	0	4		
FERISSIA	8	4	24		
GYRAULUS	0	1	0		
PHYSA	2	2	1		
ALL GASTROPODA					523
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	5	14	18		255
ALL PELECYPODA					255

B-473

MACROZOOBENTHOS PONAR GRAB COUNT DATA						5/ 1/84
DETROIT RIVER		TRANSECT 19 STATION 2			ESTIMATED	
TAXON		GRAB COUNTS			NO./SQ. METER	
		1	2	3		
NEMERTINEA		11	43	8	427	
NEMATODA		89	24	24	943	
OLIGOCHAETA						
SPIROSPERMA		45	60	13		

OTHER		119	167	60	3195	
ALL OLIGOCHAETA						
COPEPODA						
CYCLOPS VERNALIS		0	0	1		

LIMNOCALANUS		0	8	0		

ALL COPEPODA					62	
DIPTERA						
CHIRONOMIDAE		0	8	0	55	
EPHEMEROPTERA						
EPHEMERIDAE		2	2	0		
HEXAGENIA						

BAETISCIDAE		0	1	0		
BAETISCA						

ALL EPHEMEROPTERA					34	
GASTROPODA						
ARNICOLA		2	1	2		

ELIMIA LIVESCENS		1	2	0		

ALL GASTROPODA					55	

B-474

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
DETROIT RIVER		TRANSECT 19 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	1	0		7

ALL CNIDARIA					7
RHABDOCOELA	1	0	1		14
NEMERTINEA	18	5	1		165
NEMATODA	3	4	8		103
OLIGOCHAETA					
SPIROSPERMA	7	12	18		

OTHER	181	20	237		3271
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	19	2	88		751

ALL POLYCHAETA					751
COPEPODA					
CYCLOPS BICUSPIDATUS	3	0	8		

DIAPTOMUS	2	0	0		

HARPACTICOIDA	1	0	0		

LIMNOCALANUS	1	1	0		

ALL COPEPODA					110
OSTRACODA	0	0	1		7

8-475

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 1/84
TRANSECT 19 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS					
ALL AMPHIPODA	0	1	0	7	7
DIPTERA					
CHIRONOMIDAE					
EPHEMEROPTERA	2	1	5	55	
EPHEMERIDAE					
HEXAGENIA	1	0	0		
ALL EPHEMEROPTERA					7
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	0	1	0		
HYDROPSYCHE	0	1	0		
ALL TRICHOPTERA					14
ACARINA	1	2	0	21	
GASTROPODA					
AMNICOLA	1	0	0		
ELIMIA LIVESCENS	0	1	1		
FERISSIA	1	0	0		
ALL GASTROPODA					28

B-476

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
DETROIT RIVER		TRANSECT 20 STATION 1			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		0	10	3	90

ALL CNIDARIA					90
RHABDOCOELA		0	4	0	28
TRICLADIDA		0	0	3	21
NEWERTINEA		0	0	1	7
NEMATODA		8	26	20	372
OLIGOCHAETA					
NAIS		8	1	2	

SPIROSPERMA		2	0	0	

STYLARIA		1	1	0	

OTHER					
ALL OLIGOCHAETA		227	16	5	1811
COPEPODA					
CYCLOPS BICUSPIDATUS		8	0	0	

DIAPTOMUS		7	4	3	

LIMNOCALANUS		0	1	0	

ALL COPEPODA					165

B-477

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	3	5	

HYALELLA AZTECA	0	6	9	

ALL AMPHIPODA				158
DIPTERA				
CHIRONOMIDAE	0	13	32	310
EMPIDIDAE	0	1	0	
ALL DIPTERA				317
TRICHOPTERA				
HYDROPSYCHIDAE	1	0	0	
HYDROPSYCHE				

HYDROPTILIDAE	0	1	0	
HYDROPTILA				

POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	2	

ALL TRICHOPTERA				28
ODONATA				
COENAGRIONIDAE	0	0	2	14
ACARINA	0	3	2	34
GASTROPODA				
AMNICOLA	1	0	0	

ELIMIA LIVESCENS	1	0	0	

FERISSIA	0	0	3	

PHYSA	0	1	0	

ALL GASTROPODA				41

B-478

MACROZOOBENTHOS PONAR GRAB COUNT DATA		5/ 2/84	
DETROIT RIVER	TRANSECT 20 STATION 2		
TAXON	GRAB COUNTS	ESTIMATED	
	1 2 3	NO./SQ. METER	
RHABDOCOELA	1 0 0	7	
TRICLADIDA	1 0 0	7	
NEMERTINEA	1 0 2	21	
NEMATODA	73 469 97	4401	
OLIGOCHAETA			
SPIROSPERMA	4 3 2		

OTHER	94 51 29	1260	
ALL OLIGOCHAETA			
POLYCHAETA			
MANAYUNKIA SPECIOSA	1 0 1	14	

ALL POLYCHAETA		14	
CLADOCERA			
DAPHNIA	1 0 0	7	

ALL CLADOCERA		7	
COPEPODA			
CYCLOPS BICUSPIDATUS	3 0 2		

DIAPTOMUS	15 0 8		

LIMNOCALANUS	1 0 0		

ALL COPEPODA		200	

B-479

MACROZOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 20 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	1	0	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT				
DIPTERA	1	0	0	7
CHIRONOMIDAE	1	8	1	69
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	0	0	1	
ALL TRICHOPTERA				7
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	2	2	3	48
ALL GASTROPODA				48

B-480

MACROZOOBENTHOS PONAR GRAB COUNT DATA				5/ 2/84
DETROIT RIVER	TRANSECT 20 STATION 3			
TAXON		GRAB COUNTS		
		1	2	3
		ESTIMATED		
		NO./SQ. METER		
CNIDARIA				
HYDRA		0	10	2
----				83
ALL CNIDARIA				83
NEMERTINEA		18	52	1
				489
NEMATODA		91	69	160
				2204
OLIGOCHAETA				
SPIROSPERMA		15	8	8

STYLARIA		1	0	0

OTHER				
ALL OLIGOCHAETA		129	31	40
				1598
POLYCHAETA				
MANAYUNKIA SPECIOSA		1	0	24

ALL POLYCHAETA				172
				172
COPEPODA				
CYCLOPS BICUSPIDATUS		9	1	0

DIAPTOMUS		10	5	1

HARPACTICOIDA		0	0	16

LIMNOCALANUS		20	0	1

ALL COPEPODA				434
AMPHIPODA				
GAMMARUS		0	0	1

ALL AMPHIPODA				7
				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
TRANSECT 20 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	0	2	2		28
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	0	3	2		

BAETISCIDAE					
BAETISCA	0	0	3		

ALL EPHEMEROPTERA					55
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	1	2		

HYDROPSYCHE	0	0	2		

ALL TRICHOPTERA					34
ACARINA					
	0	0	1		7
GASTROPODA					
ELIMIA LIVESCENS	3	0	2		34

ALL GASTROPODA					34

B-482

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
DETROIT RIVER		TRANSECT 21 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	8	0	1		69

ALL CNIDARIA					69
RHABDOCOELA	22	39	24		585
TRICLADIDA	4	6	0		69
NEMERTINEA	1	19	2		152
NEMATODA	67	192	145		2782
OLIGOCHAETA					
NAIS	0	16	0		

SPIROSPERMA	4	24	10		

OTHER	669	1180	916		19413
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	16	16	0		220

ALL POLYCHAETA					220
COPEPODA					
CYCLOPS BICUSPIDATUS	1	2	0		

DIAPTOMUS	0	16	0		

LIMNOCALANUS	0	2	0		

ALL COPEPODA					145

B-4 83

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
TRANSECT 21 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	1	0	0		7
DIPTERA					
CERATOPOGONIDAE	5	0	1		
CHIRONOMIDAE	11	6	2		131
ALL DIPTERA					172
TRICHOPTERA					
HYDROPSYCHIDAE	0	3	0		
CHEMATOPSYCHE	1	4	0		
HYDROPSYCHE					
HYDROPTILIDAE	0	1	0		
HYDROPTILA					
POLYCENTROPODIDAE	1	1	0		
NEURECLIPSIS					76
ALL TRICHOPTERA					48
ACARINA	5	1	1		
GASTROPODA					
AMNICOLA	13	12	8		
ELIMIA LIVESCENS	0	1	0		
FERISSIA	3	2	0		
GYRAULUS	0	1	0		
PHYSA	0	1	0		
ALL GASTROPODA					282

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1 2 3	ESTIMATED NO./SQ. METER
PELECYPODA		
SPHAERIIDAE		
PISIDIUM	31 40 16	598

ALL PELECYPODA		598

B-485

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
DETROIT RIVER		TRANSECT 21 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	10	0		69

ALL CNIDARIA					69
RHABDOCOELA	2	18	0		138
TRICLADIDA	0	5	0		34
NEMERTINEA	47	2	1		344
NEMATODA	56	29	16		696
OLIGOCHAETA					
NAIS	0	4	0		

SPIROSPERMA	15	8	2		

STYLARIA	0	1	0		

OTHER	433	66	894		
ALL OLIGOCHAETA					9800
POLYCHAETA					
MANAYUNKIA SPECIOSA	251	0	0		1729

ALL POLYCHAETA					1729

B-486

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	9	2	0	
CYCLOPS VERNALIS	6	1	0	
DIAPTOMUS	9	3	24	
HARPACTICOIDA	0	3	0	
LIMNOCALANUS	5	0	1	
ALL COPEPODA				434
AMPHIPODA				
GAMMARUS	0	5	0	
HYALELLA AZTECA	0	9	0	
ALL AMPHIPODA				96
DIPTERA				
CHIRONOMIDAE	0	38	1	269
EPHEMEROPTERA				
EPHEMERIDAE	2	0	0	
HEXAGENIA				
ALL EPHEMEROPTERA				14
LEPIDOPTERA				
TRICHOPTERA	0	1	0	7
HYDROPTILIDAE				
HYDROPTILA	0	1	0	
ALL TRICHOPTERA				7
ODONATA				
COENAGRIONIDAE	0	1	0	7

B-487

5/ 2/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
ACARINA	1	4	0	34
GASTROPODA				
AMNICOLA	1	2	2	
ELIMIA LIVESCENS	1	2	2	
FERISSIA	0	8	0	
PLEUROCERA ACUTA	0	0	1	
ALL GASTROPODA				131
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	4	0	41
ALL PELECYPODA				41

B-488

MACROZOOBENTHOS PONAR GRAB COUNT DATA					5/ 2/84
DETROIT RIVER		TRANSECT 21 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		10	3	7	138

ALL CNIDARIA					138
TRICLADIDA		5	0	2	48
NEMERTINEA		1	3	8	83
NEMATODA		52	30	91	1191
OLIGOCHAETA					
SPIROSPERMA		1	1	3	

OTHER		22	14	7	
ALL OLIGOCHAETA					331
POLYCHAETA					
MANAYUNKIA SPECIOSA		36	2	2	275

ALL POLYCHAETA					275
CLADOCERA					
DAPHNIA		0	0	1	7

ALL CLADOCERA					7
COPEPODA					
CYCLOPS BICUSPIDATUS		2	0	0	

DIAPTOMUS		11	10	10	

LIMNOCALANUS		3	1	4	

ALL COPEPODA					282

B-489

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	0	1	1	14

ALL AMPHIPODA				14
DIPTERA				
CHIRONOMIDAE	8	1	6	103
EPHEMEROPTERA				
EPHEMERIDAE	0	2	0	
HEXAGENIA				

BAETISCIDAE				
BAETISCA	3	3	3	

ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE	19	3	3	
CHEMATOPSYCHE				

HYDROPSYCHE	16	0	8	

HYDROPTILIDAE	0	0	2	
HYDROPTILA				

POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	2	

ALL TRICHOPTERA				372
GASTROPODA				
AMNICOLA	0	0	1	

ELIMIA LIVESCENS	5	1	9	

PHYSA	0	0	1	

ALL GASTROPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT	1	STATION	1	
TAXON					
		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
NEMATODA		0	1	0	7
OLIGOCHAETA		2	2	2	41
CLADOCERA		8	4	5	
BOSMINA					
DAPHNIA		51	24	29	
HOLOPEDIUM		25	12	11	
LEPTODORA KINOTII		0	0	1	
ALL CLADOCERA					1171
COPEPODA					
CYCLOPS BICUSPIDATUS		2	2	0	
DIAPYCNUS		4	7	16	
ALL COPEPODA					213
OSTRACODA		0	0	1	7
TERRESTRIAL INSECT		1	0	2	21
DIPTERA					
CHIRONOMIDAE		8	7	22	255

B 491

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT	1	STATION 2		
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		0	2	0	14
ALL CNIDARIA					14
OLIGOCHAETA					
STYLARIA		0	1	0	7
ALL OLIGOCHAETA					7
CLADOCERA					
BOSMINA		3	0	4	
DAPHNIA		53	44	33	
HOLOPEDIUM		13	10	17	
ALL CLADOCERA					1218
COPEPODA					
CYCLOPS BICUSPIDATUS		2	1	4	
DIAPTOMUS		9	4	10	
EPISHURA LACUSTRIS		0	1	1	
MESOCYCLOPS		1	0	0	
ALL COPEPODA					227
AMPHIPODA					
GAMMARUS		0	1	0	7
ALL AMPHIPODA					7
TERRESTRIAL INSECT					
DIPTERA		0	2	0	14
CHIRONOMIDAE		8	9	18	241

B-492

MACROZOBENTHOS PONAR GRAB COUNT DATA						10/16/84
ST. CLAIR RIVER	TRANSECT	1	STATION	3		
TAXON					GRAB COUNTS	ESTIMATED
					1 2 3	NO./SQ. METER
CLADOCERA						
BOSMINA					1 2 0	

DAPHNIA					27 37 45	

HOLOPEIDIUM					9 7 8	

ALL CLADOCERA						937
COPEPODA						
CYCLOPS BICUSPIDATUS					0 0 1	

DIAPTOMUS					3 14 4	

ALL COPEPODA						152
TERRESTRIAL INSECT						
					0 1 3	28
DIPTERA						
CHIRONOMIDAE					21 13 14	331
PELECYPODA						
SPHAERIIDAE						
SPHAERIUM					1 0 0	7

ALL PELECYPODA						7

B-493

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT	2	STATION 1		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA					
HYDRA				1458 978 498	20205

ALL CNIDARIA					20205
RHABDOCOELA				36 0 15	351
TRICLADIDA				3 2 2	48
NEMERTINEA				0 1 4	34
NEMATODA				17 0 35	358
HIRUDINEA					
ERPOBDELLIDAE				1 0 2	
PISCICOLIDAE					
PISCICOLA				0 0 2	

ALL HIRUDINEA					34
OLIGOCHAETA					
NAIS				594 65 508	

SPIROSPERMA				263 35 228	

STYLARIA				36 1 0	

OTHER				1669 1329 929	
ALL OLIGOCHAETA					38958

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/16/84
TRANSECT 2 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CLADOCERA	32	35	1	
DAPHNIA				
HOLOPEDID	0	4	3	
SIDA CRYSTALLINA	0	1	0	
ALL CLADOCERA				523
COPEPODA				
DIAPYCNUS	0	16	8	
EPISHURA LACUSTRIS	0	8	0	
HARPACTICOIDA	16	8	0	
ALL COPEPODA				386
OSTRACODA	3	29	10	289
AMPHIPODA				
GAMMARUS	22	28	22	
HYALELLA AZTECA	1	10	3	
ALL AMPHIPODA				592
TERRESTRIAL INSECT	5	3	0	55
DIPTERA				
CERATOPOGONIDAE	0	0	2	
CHIRONOMIDAE	131	166	142	3023
EMPHIDIDAE	0	0	2	
ALL DIPTERA				3051

B-496

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
TRANSECT 2 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	3	24	4		

EPHEMERIDAE					
HEXAGENIA	0	0	1		

ALL EPHEMEROPTERA					220
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	12	6	11		

ALL COLEOPTERA					200
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	9	9	5		

HYDROPSYCHE	2	10	1		

PHRYGANEIDAE					
PHRYGANEA	0	0	1		

POLYCENTROPODIDAE					
NEURECLIPSIS	20	9	17		

ALL TRICHOPTERA					572
PLECOPTERA					
	1	1	0		14
ACARINA					
	1	10	5		110
GASTROPODA					
AMNICOLA	154	72	105		

FERISSIA	2	0	0		

GYRAULUS	0	0	1		

PHYSA	65	87	67		

ALL GASTROPODA					3808

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/16/84
TRANSECT 2 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	21	5	13	269

ALL PELECYPODA				269

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/16/84
TRANSECT 2 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OLIGOCHAETA				
NAIS	49	0	0	

SPIROSPERMA	50	50	11	

STYLARIA	16	0	1	

OTHER				
ALL OLIGOCHAETA	1283	839	492	19221
CLADOCERA				
BOSMINA	0	0	8	

DAPHNIA	97	50	57	

HOLOPEDIIUM	0	0	41	

ALL CLADOCERA				1742
COPEPODA				
CYCLOPS BICUSPIDATUS	16	0	0	

DIAPTOMUS	16	1	0	

EPISHURA LACUSTRIS	0	32	8	

ALL COPEPODA				503
OSTRACODA				
	17	19	0	248
AMPHIPODA				
GAMMARUS	69	22	23	

HYALELLA AZTECA	1	0	2	

ALL AMPHIPODA				806
ISOPODA				
ASELLUS	1	0	0	7

ALL ISOPODA				7

B-499

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TERRESTRIAL INSECT	3	0	0	21	
DIPTERA					
CHIRONOMIDAE	51	62	47	1102	
EMPHIDIDAE	0	0	1		
PSYCHODIDAE	1	1	1	1129	
ALL DIPTERA					
EPHEMEROPTERA					
CAENIDAE					
CAENIS	16	1	2		

EPHEMERIDAE					
HEXAGENIA	0	0	2		

HEPTAGENIIDAE					
STENONEMA	1	0	1		

ALL EPHEMEROPTERA				158	
COLEOPTERA					
ELMIDAE					
DUBIRAPHIA	1	1	0		

ALL COLEOPTERA				14	
TRICHOPTERA					
TRICHOPTERA	0	0	1		
BRACHYCENTRIDAE					
BRACHYCENTRUS	0	0	2		

HYDROPSYCHIDAE					
CHEUMATOPSYCHE	21	2	22		

HYDROPSYCHE	13	1	25		

POLYCENTROPODIDAE					
NEURECLIPSIS	6	1	9		

ALL TRICHOPTERA				709	

B-500

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
TRANSECT 2 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS				ESTIMATED
	1	2	3	4	NO./SQ. METER
ACARINA	0	0	0	4	28
GASTROPODA					
AMNICOLA	20	28	19		
ELIMIA LIVESCENS	1	10	15		
FERISSIA	137	49	46		
GYRAULUS	1	0	0		
PHYSA	36	11	41		
ALL GASTROPODA					2851
PELECYPODA					
SPHAERIIDAE	3	21	17		
PISIDIUM					282
ALL PELECYPODA					282

B-501

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT 2 STATION 3	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
-----					-----
CNIDARIA					
HYDRA					

ALL CNIDARIA					244311
					244311
RHABDOCOELA		161	1	8	1171
TRICLADIDA		1	7	10	124
NEMERTINEA		495	81	27	4153
NEMATODA		0	0	1	7
OLIGOCHAETA					
SPIROSPERMA		6	16	1	

OTHER		389	36	16	
ALL OLIGOCHAETA					3195
CLADOCERA					
BOSMINA		96	114	17	

DAPHNIA		160	146	49	

HOLOPEDIIUM		0	0	16	

ALL CLADOCERA					4118

B-502

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/16/84
TRANSECT 2 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	9	

DIAPTOMUS	192	51	16	

EPISHURA LACUSTRIS	64	0	0	

ALL COPEPODA				2283
AMPHIPODA				
GAMMARUS	3	9	4	

HYALELLA AZTECA	0	2	0	

ALL AMPHIPODA				124
DIPTERA				
CHIRONOMIDAE	13	1	1	
EMPIDIDAE	3	0	10	103
ALL DIPTERA				193
EPHEMEROPTERA				
CAENIDAE	2	1	1	
CAENIS				

EPHEMERIDAE				
HEXAGENIA	2	0	1	

HEPTAGENIIDAE				
STENONEMA	3	14	4	

ALL EPHEMEROPTERA				193
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	2	0	

ALL COLEOPTERA				21
LEPIDOPTERA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
TRANSECT 2 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	7	1	1		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	108	172	32		
HYDROPSYCHE	90	60	17		
POLYCENTROPODIDAE					
NEURECLIPSIS	2	2	0		
RHYACOPHILIDAE					
PROTOPTILA	44	23	40		4125
ALL TRICHOPTERA					7
ACARINA	0	1	0		
GASTROPODA					
AMNICOLA	2	5	6		
ELIMIA LIVESCENS	42	51	23		
FERISSIA	1	1	0		
LYMNAEA	2	6	0		
PHYSA	1	1	9		
ALL GASTROPODA					1033
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	3	7	1		
SPHAERIUM	1	1	0		
ALL SPHAERIIDAE					90
ALL PELECYPODA					90

B-504

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT	3	STATION 1		
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	427	11	23	3175	
HYDRA					

ALL CNIDARIA				3175	
NEMERTINEA	0	0	1	7	
NEMATODA	0	0	2	14	
OLIGOCHAETA					
NAIS	1	0	0		

OTHER	3	18	4		
ALL OLIGOCHAETA				179	
CLADOCERA					
BOSMINA	6	14	1		

DAPHNIA	7	13	10		

HOLOPEDIUM	4	13	3		

ALL CLADOCERA				489	
COPEPODA					
CYCLOPS BICUSPIDATUS	4	5	0		

DIATOMUS	14	13	5		

EPISHURA LACUSTRIS	1	1	1		

ALL COPEPODA				303	
AMPHIPODA					
GAMMARUS	1	0	0		

ALL AMPHIPODA				7	

B- 505

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/16/84

TRANSECT 3 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA				
CHIRONOMIDAE	6	38	28	496
EMPHIDIDAE	1	0	2	
ALL DIPTERA				516
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	14	1	2	
LEPTOCERIDAE				
CERACLEA	0	1	0	
ALL TRICHOPTERA				131
PLECOPTERA				
ISOGENOIDES	0	0	1	7
ALL PLECOPTERA				7
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	1	0	0	
PHYSA	0	1	0	
ALL GASTROPODA				14

18-506

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT	3	STATION 2		
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		231	61	14	2107
HYDRA					

ALL CNIDARIA					2107
NEMERTINEA		3	1	0	28
NEMATODA		2	1	0	21
OLIGOCHAETA					
STYLARIA		2	0	0	

OTHER		4	9	1	
ALL OLIGOCHAETA					110
POLYCHAETA					
MANAYUNKIA SPECIOSA		1	0	0	7

ALL POLYCHAETA					7
CLADOCERA					
BOSMINA		7	7	7	

DAPHNIA		12	7	1	

HOLOPEIDIUM		1	3	2	

ALL CLADOCERA					324
COPEPODA					
CYCLOPS BICUSPIDATUS		7	0	2	

DIATOMUS		16	13	6	

EPISHURA LACUSTRIS		0	1	0	

ALL COPEPODA					310

B-507

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/16/84
TRANSECT 3 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	18	44	35	668
EMPIDIDAE	0	1	1	
ALL DIPTERA				682
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	1	0	0	

ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	

HYDROPSYCHE	3	0	0	

LEPTOCERIDAE				
CERACLEA	0	0	3	

ALL TRICHOPTERA				48
PLECOPTERA				
ISOGENOIDES	0	2	0	14

ALL PLECOPTERA				14
ACARINA	1	0	0	7

13-508

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
ST. CLAIR RIVER	TRANSECT 3	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	11	34	24	475	
HYDRA					
ALL CNIDARIA				475	
NEMERTINEA	0	0	2	14	
NEMATODA	2	0	1	21	
OLIGOCHAETA					
SPIROSPERMA	0	0	1		
STYLARIA	0	1	0		
OTHER	2	5	13	152	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	1	0	7	
ALL POLYCHAETA				7	
CLADOCERA					
BOSMINA	4	6	8		
DAPHNIA	6	11	11		
HOLOPEDIIUM	6	4	6		
ALL CLADOCERA				427	

B-509

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/16/84
TRANSECT 3 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	4	0		
DIPTOMUS	7	9	16		
EPISHURA LACUSTRIS	0	2	1		
MESOCYCLOPS	0	0	1		
ALL COPEPODA				275	
AMPHIPODA					
GAMMARUS	0	1	0	7	
ALL AMPHIPODA				7	
DIPTERA					
CHIRONOMIDAE	53	23	109	1274	
EMPIDIDAE	0	2	0	1288	
ALL DIPTERA					
EPEMEROPTERA					
CAENIDAE	0	1	0		
CAENIS					
EPEMERIDAE					
HEXAGENIA	0	1	0		
ALL EPEMEROPTERA				14	
TRICHOPTERA					
HYDROPSYCHIDAE	0	1	0		
HYDROPSYCHE					
LEPTOCERIDAE	1	0	1		
CERACLEA					
ALL TRICHOPTERA				21	
GASTROPODA					
AMNICOLA	0	8	0		
PHYSA	0	1	0		
ALL GASTROPODA				62	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/16/84
TRANSECT 3 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE	0	10	0	69
PISIDIUM				
ALL PELECYPODA				69

B-5 11

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	4	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	229	329	848	9683	
ALL CNIDARIA				9683	
RHABDOCOELA	1	3	1	34	
TRICLADIDA	2	1	6	62	
NEMERTINEA	26	21	93	964	
NEMATODA	25	114	2	971	
HIRUDINEA					
ERPOBDELLIDAE	0	0	1	7	
OLIGOCHAETA					
NAIS	555	170	562		
SPIROSPERMA	202	198	142		
STYLARIA	82	72	360		
OTHER	284	175	452		
ALL OLIGOCHAETA				22409	

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 4 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
BOSMINA	0	33	3		

CAMPTOCERCUS	1	0	0		

HOLOPEDIIUM	16	0	0		

ALL CLADOCERA					365
COPEPODA					
DIAPTOMUS	0	16	0		

HARPACTICOIDA	0	0	18		

ALL COPEPODA					234
OSTRACODA					
	29	39	19		599
AMPHIPODA					
GAMMARUS	301	252	480		

HYALELLA AZTECA	6	10	14		

ALL AMPHIPODA					7321
DIPTERA					
CHIRONOMIDAE	255	207	169		4345
EMPIDIDAE	2	0	0		
ALL DIPTERA					4359
EPHEMEROPTERA					
CAENIDAE					
CAENIS	61	97	43		

EPHEMERIDAE					
HEXAGENIA	80	184	104		

HEPTAGENIIDAE					
STENONEMA	1	0	2		

ALL EPHEMEROPTERA					3939

B-513

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 4 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	2	
LEPTOCERIDAE				
CERACLEA	0	0	1	
MYSTACIDES	0	16	0	
ALL TRICHOPTERA				138
ACARINA	10	33	1	303
GASTROPODA				
AMNICOLA	65	41	56	
ELIMIA LIVESCENS	61	39	46	
GYRAULUS	1	16	31	
LYMNAEA	0	2	0	
PHYSA	37	19	3	
VALVATA SINCERA	0	1	0	
VALVATA TRICARINATA	40	29	33	
ALL GASTROPODA				3581
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	92	60	56	1432
ALL PELECYPODA				1432

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	4	STATION 2		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
FISH					
ICHTHYOMYZON FOSSOR				0 0 1	7

ALL FISH					7
CNIDARIA					
HYDRA					

ALL CNIDARIA				3294 3075 2418	60513
-----					60513
RHABDOCOELA				0 0 1	7
TRICLADIDA				2 0 0	14
NEMERTINEA				16 9 8	227
NEMATODA				20 5 10	241
HIRUDINEA					
ERPOBDELLIDAE				1 0 0	
GLOSSIPHONIIDAE					
ACTINOBDELLA INEQUIANNUATA				0 1 0	

ALL HIRUDINEA					14

10/17/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OLIGOCHAETA				
NAIS	48	0	0	

SPIROSPERMA	32	10	2	

STYLARIA	16	0	0	

OTHER	275	55	135	
ALL OLIGOCHAETA				3946
CLADOCERA				
BOSMINA	1	16	25	

DAPHNIA	16	1	24	

HOLOPEDIIUM	0	1	0	

ALL CLADOCERA				578
COPEPODA				
DIAPTOMUS	16	0	0	

HARPACTICOIDA	1	0	0	

ALL COPEPODA				117
OSTRACODA				

AMPHIPODA	1	0	0	7

GAMMARUS	19	5	5	200

ALL AMPHIPODA				200
TERRESTRIAL INSECT	1	0	0	7

B-516

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
DIPTERA	236	19	35	1997
CHIRONOMIDAE	1	0	8	2059
EMPIDIDAE				
ALL DIPTERA				
EPHEMEROPTERA				
CAENIDAE	1	0	0	
CAENIS				

EPHEMERIDAE	1	1	0	
HEXAGENIA				

ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE	1	0	0	
HYDROPSYCHE				

POLYCENTROPODIDAE	1	0	0	
PHYLOCENTROPUS				

ALL TRICHOPTERA				14
ODONATA				
GOMPHIDAE	1	0	1	14
GOMPHUS				

ALL ODONATA				14
ACARINA	4	1	0	34

B-517

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 4 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	36	50	43	
ELIMIA LIVESCENS	2	12	0	
GYRAULUS	1	0	1	
LYMAEA	0	0	1	
PHYSA	6	6	6	
VALVATA TRICARINATA	1	3	1	
ALL GASTROPODA				1164
PELECYPODA				
SPHAERIIDAE	80	15	24	820
PISIDIUM	0	0	1	
UNIONIDAE				
ALL PELECYPODA				826

B-518

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER		TRANSECT 4 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
-----					-----
CNIDARIA					
HYDRA					

ALL CNIDARIA		550	1939	5312	53723
RHABDOCOELA					53723
TRICLADIDA		0	0	1	7
NEWERTINEA		0	1	0	7
NEMATODA		0	19	17	248
OLIGOCHAETA		5	45	10	413
STYLARIA					

OTHER		0	8	1	
ALL OLIGOCHAETA		50	2	165	1356
CLADOCERA					
BOSMINA		2	8	24	
DAPHNIA		1	16	8	
HOLOPEDIDUM		5	0	0	

ALL CLADOCERA					441
COPEPODA					
CYCLOPS BICUSPIDATUS		0	0	16	

MESOCYCLOPS		0	0	8	

ALL COPEPODA					165

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS					ESTIMATED NO./SQ. METER
	1	2	3	4	9	
AMPHIPODA						
GAMMARUS	1					96
ALL AMPHIPODA						96
DIPTERA						
CHIRONOMIDAE	7	3	17			186
EMPIDIDAE	0	1	0			193
ALL DIPTERA						
EPEMEROPTERA						
CAENIDAE	0	1	0			
CAENIS						
BAETISCIDAE						
BAETISCA	0	1	1			
HEPTAGENIIDAE						
STENONEMA	0	2	0			
ALL EPEMEROPTERA						34
TRICHOPTERA						
HYDROPSYCHIDAE						
CHEUMATOPSYCHE	2	1	5			
HYDROPSYCHE	8	2	14			
LEPTOCERIDAE						
CERACLEA	0	0	1			
RHYACOPHILIDAE						
PROTOPTILA	0	1	0			
ALL TRICHOPTERA						234
ACARINA	0	12	1			90

B-520

10/17/84

MACROZOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 4 STATION 3 (CONT'D)

GRAB COUNTS ESTIMATED
1 2 3 NO./SQ. METER

TAXON

1 1 11

GASTROPODA

AMNICOLA

3 18 22

ELIMIA LIVESCENS

0 1 0

FERISSIA

0 2 0

LYMNAEA

2 0 0

PHYSA

420

ALL GASTROPODA

PELECYPODA

SPHAERIIDAE

PISIDIUM

ALL PELECYPODA

1 2 11

96

96

B-521

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	5	STATION	1	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	9633 9041 3578			153242	
HYDRA				153242	
ALL CNIDARIA				153242	
RHABDOCOELA	3	2	2	48	
TRICLADIDA	6	23	5	234	
NEMERTINEA	17	7	6	207	
NEMATODA	0	16	17	227	
BRYOZOA	+	0	0	+	
HIRUDINEA					
ERPOBDELLIDAE					
ERPOBDELLA PUNCTATA	0	2	0		
OTHER	1	0	0		
PISCICOLIDAE	4	0	0		
ALL HIRUDINEA				48	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 5 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
OLIGOCHAETA				
NAIS	326	215	321	

SPIROSPERMA	16	18	28	

STYLARIA	354	389	502	

OTHER				
ALL OLIGOCHAETA	2237	519	392	36616
CLADOCERA				
BOSMINA	32	3	1	

DAPHNIA	0	0	1	

HOLOPEDIIUM	16	0	1	

ILYOCRYPTUS	0	0	1	

ALL CLADOCERA				379
COPEPODA				
DIPTOMUS	16	0	0	110

ALL COPEPODA				110
OSTRACODA				
	0	1	0	7
AMPHIPODA				
GAMMARUS	344	492	282	

HYALELLA AZTECA	3	1	5	

ALL AMPHIPODA				7761
DIPTERA				
CHIRONOMIDAE	175	316	203	4779

B-523

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 5 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	37	41	30	
EPHEMERIDAE				
HEXAGENIA	55	114	108	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
BAETISCIDAE				
BAETISCA	7	2	14	
HEPTAGENIIDAE				
STENONEMA	6	4	3	
ALL EPHEMEROPTERA				2906
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	0	
ALL COLEOPTERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	0	2	

MICRASEMA	1	0	0	

HYDROPSYCHIDAE				
CHEUMATOPSYCHE	21	11	0	

HYDROPSYCHE	31	15	3	

LEPTOCERIDAE				
CERACLEA	0	3	1	

MYSTACIDES	0	2	0	

OECETIS	0	1	1	

SETODES	0	1	0	

TRIAENODES	0	1	0	

POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	

POLYCENTROPUS	1	0	0	

ALL TRICHOPTERA				675
ODONATA				
GOMPHIDAE				
GOMPHUS	0	1	1	14

ALL ODONATA				14
ACARINA	21	8	1	207

B-525

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 5 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	15	17	16	

ELIMIA LIVESCENS	5	16	10	

PHYSA	10	58	6	

VALVATA TRICARINATA	13	44	21	

ALL GASTROPODA				1591
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	49	68	84	1384

UNIONIDAE	0	1	0	
ALL PELECYPODA				1391

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	5	STATION	2	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	1241010672 9495			224347	
HYDRA					
ALL CNIDARIA				224347	
RHABDOCOELA	0	0	1	7	
TRICLADIDA	2	0	0	14	
NEMERTINEA	0	17	1	124	
NEMATODA	51	35	3	613	
HIRUDINEA					
PISCICOLIDAE					
PISCICOLA MILNERI	0	1	1		
ALL HIRUDINEA				14	
OLIGOCHAETA					
NAIS	99	64	16		
SPIROSPERMA	7	3	49		
STYLARIA	1011	744	683		
OTHER	234	981	294		
ALL OLIGOCHAETA				28821	

B-527

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 5 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA	41	54	19		
BOSMINA					

DAPHNIA	1	0	5		

EURYCERCUS LAMELLATUS	16	0	0		

HOLOPEDIIUM	3	17	5		

ALL CLADOCERA				1109	
COPEPODA					
CYCLOPS BICUSPIDATUS	32	1	0		

DIAPTOMUS	16	0	16		

HARPACTICOIDA	1	16	0		

ALL COPEPODA				565	
OSTRACODA	17	34	33	578	
AMPHIPODA					
GAMMARUS	103	350	20		

HYALELLA AZTECA	8	2	0		

ALL AMPHIPODA				3326	
TERRESTRIAL INSECT	1	1	1	21	
DIPTERA					
CHIRONOMIDAE	316	558	86	6611	

B-528

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 5 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	38	72	1		
EPHEMERIDAE					
HEXAGENIA	249	306	89		
HEPTAGENIIDAE					
STENONEMA	6	28	10		
ALL EPHEMEROPTERA					5509
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	4	7	3		
HYDROPSYCHE	23	32	9		
LEPTOCERIDAE					
CERACLEA	1	2	2		
MYSTACIDES	0	2	0		
NECTOPSYCHE	0	0	2		
POLYCENTROPODIDAE					
NEURECLIPSIS	7	0	1		
POLYCENTROPUS	1	0	0		
ALL TRICHOPTERA					661
ODONATA					
GOMPHIDAE					
GOMPHUS	0	1	0		7
ALL ODONATA					7
ACARINA	0	35	5		275

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 5 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	29	8	43		
ELIMIA LIVESCENS	11	1	30		
GYRAULUS	1	1	1		
LYMNAEA	0	0	1		
PLEUROCERA ACUTA	0	1	1		
VALVATA SINCERA	0	1	0		
VALVATA TRICARINATA	56	32	21		
ALL GASTROPODA					1639
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	50	55	24		888
ALL PELECYPODA					888

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	5	STATION	3	
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA					

ALL CNIDARIA	2260	374	527	21769	
TRICLADIDA					
	0	0	1	7	
NEMERTINEA					
	20	8	6	234	
NEMATODA					
	7	1	4	83	
OLIGOCHAETA					
NAIS					

STYLARIA					

OTHER					
ALL OLIGOCHAETA	34	0	0		
	17	0	1		
	39	24	85	1377	
CLADOCERA					
BOSMINA					

DAPHNIA					

EURYCERCUS LAMELLATUS					

HOLOPEDIIUM					

ALL CLADOCERA	40	13	8		
	1	1	5		
	0	1	0		
	33	3	14		
					820

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 5 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	9	3	0		
DIPTOMUS	8	18	7		
EPISHURA LACUSTRIS	0	3	1		
MESOCYCLOPS	1	0	0		
ALL COPEPODA				344	
AMPHIPODA					
GAMMARUS	4	1	0		34
ALL AMPHIPODA					34
DIPTERA					
CHIRONOMIDAE	31	25	100		1074
EPHEMEROPTERA					
CAENIDAE	0	1	0		
CAENIS					
EPHEMERIDAE	1	0	1		
HEPTAGENIIDAE					
STENONEMA	1	0	0		
ALL EPHEMEROPTERA				28	
TRICHOPTERA					
HYDROPSYCHIDAE	11	4	0		
CHEMATOPSYCHE	61	10	1		
HYDROPSYCHE					
LEPTOCERIDAE	1	1	0		
CERACLEA					
ALL TRICHOPTERA				613	
PLECOPTERA					
ISOGENOIDES	2	0	0		14
ALL PLECOPTERA					14

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 5 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	14

ALL PELECYPODA				14

B-533

10/17/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

ST. CLAIR RIVER TRANSECT 6 STATION 1

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PORIFERA	0	+	0	+
SPONGILLA				

ALL PORIFERA				0
CNIDARIA				
HYDRA	1177	156	111	9944

ALL CNIDARIA				9944
RHABDOCOELA	0	2	2	28
TRICLADIDA	41	13	23	530
NEMATODA	25	11	9	310
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	2	0	2	

ALL HIRUDINEA				28
OLIGOCHAETA				
NAIS	24	0	0	

SPIROSPERMA	12	15	24	

STYLARIA	123	128	140	

OTHER	37	55	107	
ALL OLIGOCHAETA				4580
CLADOCERA				
DAPHNIA	9	24	0	

HOLOPEDIIUM	38	54	0	

ALL CLADOCERA				861

B-534

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
DIAPYOMUS	0	8	0		

EPIHURA LACUSTRIS	0	2	1		

ALL COPEPODA					76
OSTRACODA					
	43	81	24		1019
AMPHIPODA					
GAMMARUS	227	108	195		3650

ALL AMPHIPODA					3650
ISOPODA					
ASELLUS	1	0	0		7

ALL ISOPODA					7
TERRESTRIAL INSECT					
	0	2	0		14
DIPTERA					
CHIRONOMIDAE	158	107	146		2830
EMPHIDAE	1	1	0		
ALL DIPTERA					2844
EPHEMEROPTERA					
CAENIDAE					
CAENIS	39	79	62		

EPHEMERIDAE					
HEXAGENIA	148	149	225		

EPHEMERELLIDAE					
EPHEMERELLA	1	0	0		

ALL EPHEMEROPTERA					4841

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 6 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	1	0	0		

LEPTOCERIDAE					
CERACLEA	10	2	5		

OECETIS	8	5	7		

SETODES	0	0	4		

POLYCENTROPODIDAE					
POLYCENTROPUS	1	0	0		

ALL TRICHOPTERA				303	
ACARINA					
	0	2	1		21
GASTROPODA					
AMNICOLA	36	22	11		

ELIMIA LIVESCENS	16	22	13		

GYRAULUS	44	18	25		

PHYSA	30	0	8		

ALL GASTROPODA				1694	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	3	1	1		

SPHAERIUM	1	2	3		

ALL SPHAERIIDAE					76
ALL PELECYPODA					76

B-536

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/17/84
ST. CLAIR RIVER	TRANSECT	6	STATION	2		
TAXON					GRAB COUNTS	ESTIMATED
					1 2 3	NO./SQ. METER
CNIDARIA						
HYDRA						
ALL CNIDARIA					707 5091 4625	71780
RHABDOCELA						
					6 3 7	110
TRICLADIDA						
					11 1 19	213
NEMERTINEA						
					2 0 0	14
NEMATODA						
					32 2 18	358
HIRUDINEA						
GLOSSIPHONIIDAE						
HELOBDELLA ELONGATA					0 1 0	
PISCICOLIDAE						
PISCICOLA					1 0 1	
ALL HIRUDINEA						21
OLIGOCHAETA						
NAIS					0 6 16	
SPIROSPERMA					1 0 1	
STYLARIA						
					231 97 227	
OTHER						
ALL OLIGOCHAETA					42 88 77	5413

B-537

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 6 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
BOSMINA	8	34	48		

DAPHNIA	35	34	17		

HOLOPEDIIUM	35	1	67		

ALL CLADOCERA					1921
COPEPODA					
DIAPYCNUS	9	0	16		

EPISHURA LACUSTRIS	0	2	3		

MESOCYCLOPS	0	0	1		

ALL COPEPODA					213
OSTRACODA	12	15	12		269
AMPHIPODA					
GAMMARUS	113	31	43		

HYALELLA AZTECA	2	1	7		

ALL AMPHIPODA					1357
ISOPODA					
AELLUS	1	0	0		7

ALL ISOPODA					7
TERRESTRIAL INSECT	0	0	1		7
DIPTERA					
CERATOPOGONIDAE	3	0	1		
CHIRONOMIDAE	342	161	135		4394
ALL DIPTERA					4421

B-538

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 6 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	20	9	6	

EPHEMERIDAE				
HEXAGENIA	244	336	118	

HEPTAGENIIDAE				
STENONEMA	2	0	2	

ALL EPHEMEROPTERA				5075
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	1	2	

HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	

HYDROPSYCHE	0	8	5	

LEPTOCERIDAE				
CERACLEA	1	2	0	

NECTOPSYCHE	0	0	1	

OEGETIS	1	0	0	

TRIAENODES	0	0	1	

POLYCENTROPIDIDAE				
NEURECLIPSIS	0	6	6	

POLYCENTROPUS	0	0	2	

ALL TRICHOPTERA				269
ACARINA	1	0	3	28

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 6 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	9	21	30		
ELIMIA LIVESCENS	0	1	0		
GYRAULUS	9	3	4		
PHYSA	12	5	18		
VALVATA TRICARINATA	0	0	2		
ALL GASTROPODA					785
PELECYPODA					
SPHAERIIDAE	6	3	1		69
PISIDIUM	1	0	0		
UNIONIDAE					
ALL PELECYPODA					76

B-540

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/17/84
ST. CLAIR RIVER	TRANSECT	6	STATION	3		
TAXON					GRAB COUNTS	ESTIMATED
					1 2 3	NO./SQ. METER
CNIDARIA						
HYDRA						

ALL CNIDARIA					12813 1982 2662	120878
						120878
RHABDOCOELA					3 0 0 0	21
NEMERTINEA					0 0 0 4	28
NEMATODA					0 4 48	365
HIRUDINEA						
GLOSSIPHONIIDAE						
MELOBDELLA ELONGATA					0 0 0 1	

PISCICOLIDAE						
PISCICOLA					0 1 0	

ALL HIRUDINEA						14
OLIGOCHAETA						
NAIS					56 3 37	

SPIROSPERMA					0 17 1	

STYLARIA					155 97 73	

OTHER					98 72 207	
ALL OLIGOCHAETA						5620
CLADOCERA						
BOSMINA					51 0 16	

DAPHNIA					49 18 1	

HOLOPEIDIUM					48 0 0	

ALL CLADOCERA						1260

13-541

10/17/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
DIAPYOMUS	0	0	1	

LIMNOCALANUS	0	0	1	

MESOCYCLOPS	1	0	0	

ALL COPEPODA				21
OSTRACODA	7	1	12	138
AMPHIPODA				
GAMMARUS	67	14	16	

HYALELLA AZTECA	2	0	2	

ALL AMPHIPODA				696
TERRESTRIAL INSECT	1	1	0	14
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	96	124	153	2569
EMPIDIDAE	0	0	2	
ALL DIPTERA				2569
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	2	4	

EPHEMERIDAE				
HEXAGENIA	253	316	408	

HEPTAGENIIDAE				
STENONEMA	0	0	1	

ALL EPHEMEROPTERA				6845

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 6 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	1	0	

MICRASEMA	2	0	0	

HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	1	

HYDROPSYCHE	5	3	3	

LEPTOCERIDAE				
CERACLEA	16	0	0	

MYSTACIDES	1	0	0	

DECETIS	0	2	0	

SETODES	0	2	0	

POLYCENTROPODIDAE				
NEURECLIPSIS	0	1	3	

ALL TRICHOPTERA				289
ACARINA				
	0	1	2	21
GASTROPODA				
ANNICOLA	8	9	12	

ELIMIA LIVESCENS	3	1	2	

GYRAULUS	2	0	0	

PHYSA	1	0	0	

ALL GASTROPODA				262
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	7	1	

ALL PELECYPODA				69

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	7	STATION 1		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA				4615 5274 4220	97164
HYDRA					

ALL CNIDARIA					97164
RHABDOCOELA				2 2 0	28
TRICLADIDA				34 16 6	386
NEMERTINEA				1 1 0	14
NEMATODA				2 0 1	21
HIRUDINEA					
GLOSSIPHONIIDAE				1 0 0	
BATRACHODELLA PHALERA					

PISCICOLIDAE				1 0 1	
PISCICOLA MILNERI					

OTHER				0 0 1	
ALL HIRUDINEA					28
OLIGOCHAETA					
NAIS				149 112 65	

SPIROSPERMA				93 56 2	

STYLARIA				353 307 375	

OTHER				1310 1286 844	
ALL OLIGOCHAETA					34103

B-544

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 7 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CLADOCERA					
BOSMINA	21	1	6		

DAPHNIA	0	16	1		

HOLOPEDIUM	18	16	17		

ALL CLADOCERA				661	
COPEPODA					
DIAPYCNUS	2	0	16		

EPISHURA LACUSTRIS	1	0	0		

PARACYCLOPS	0	0	16		

ALL COPEPODA				241	
OSTRACODA	0	2	0	14	
AMPHIPODA					
GAMMARUS	428	162	109		

HYALELLA AZTECA	15	5	7		

ALL AMPHIPODA				5000	
TERRESTRIAL INSECT	0	1	0	7	
DIPTERA					
CHIRONOMIDAE	274	125	115	3540	

B-545

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 7 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	30	1	3	
EPHEMERIDAE				
HEXAGENIA	44	23	8	
BAETISCIDAE				
BAETISCA	0	0	1	
HEPTAGENIIDAE				
STENONEMA	0	0	1	
ALL EPHEMEROPTERA				764
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	8	1	3	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	3	9	
HYDROPSYCHE	6	5	8	
LEPTOCERIDAE				
CERACLEA	1	5	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	3	0	3	
ALL TRICHOPTERA				386
ACARINA				
	1	1	5	48
GASTROPODA				
AMNICOLA	110	41	9	
ELIMIA LIVESCENS	12	17	6	
GYRAULUS	25	11	1	
PHYSA	18	33	19	
VALVATA TRICARINATA	0	3	0	
ALL GASTROPODA				2100

B-546

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 7 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	40	18	17	

SPHAERIUM	2	1	0	

ALL SPHAERIIDAE				537
ALL PELECYPODA				537

B-547

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/17/84
ST. CLAIR RIVER	TRANSECT	7 STATION 2			GRAB COUNTS	ESTIMATED
TAXON			1	2	3	NO./SQ. METER

CNIDARIA			12376	6668	6377	175066
HYDRA						175066

ALL CNIDARIA						
RHABDOCOELA			1	1	0	14
TRICLADIDA			1	1	0	14
NEMERTINEA			17	1	33	351
NEMATODA			1	18	35	372

OLIGOCHAETA			102	32	49	
NAIS						

SPIROSPERMA			21	31	26	

STYLARIA			138	64	146	

OTHER			1952	909	1008	
ALL OLIGOCHAETA						30638

CLADOCERA			16	18	0	
BOSMINA						

DAPHNIA			17	0	1	

HOLOPEIDIUM			0	17	0	

ALL CLADOCERA						475

B-548

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 7 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
COPEPODA				
DIAPYCNUS	0	1	16	117
ALL COPEPODA				117
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	117	88	76	
HYALELLA AZTECA	7	1	5	
ALL AMPHIPODA				2028
DIPTERA				
CHIRONOMIDAE	197	158	39	2713
EMPHIDIDAE	1	1	0	
ALL DIPTERA				2727
EPHEMEROPTERA				
CAENIDAE	11	5	6	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	67	37	17	
BAETISCIDAE				
BAETISCA	4	0	0	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				1026

B-549

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 7 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	2	0	2		
MICRASEMA	0	1	0		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	3	5	2		
HYDROPSYCHE	9	5	10		
LEPTOCERIDAE					
CERACLEA	3	2	0		
MYSTACIDES	2	0	0		
OECETIS	0	1	1		
POLYCENTROPODIDAE					
NEURECLIPSIS	8	2	2		413
ALL TRICHOPTERA					14
ACARINA	2	0	0		
GASTROPODA					
ANNICOLA	46	24	11		
ELIMIA LIVESCENS	8	4	0		
GYRAULUS	19	1	3		
PHYSA	5	18	4		
ALL GASTROPODA					985
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	65	22	35		
SPHAERIUM	1	4	1		
ALL SPHAERIIDAE					881
ALL PELECYPODA					881

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT 7 STATION 3	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA					

ALL CNIDARIA		6352	8586	4997	137286
					137286
RHABDOCELA		0	1	1	14
TRICLADIDA		0	0	1	7
NEMERTINEA		1	1	2	28
NEMATODA		51	73	166	1997
OLIGOCHAETA					
NAIS		0	0	17	

SPIROSPERMA		0	21	0	

STYLARIA		81	64	50	

OTHER		571	730	681	15323
ALL OLIGOCHAETA					
CLADOCERA					
BOSMINA		17	34	32	

DAPHNIA		1	48	2	

HOLOPEDIIUM		0	34	16	

ALL CLADOCERA					1267

B- 551

10/17/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
DIAPYOMUS	16	0	1	117
ALL COPEPODA				117
AMPHIPODA				
GAMMARUS	47	91	35	
HYALELLA AZTECA	2	1	1	
ALL AMPHIPODA				1219
DIPTERA				
CHIRONOMIDAE	10	24	13	324
EMBIIDAE	2	0	3	358
ALL DIPTERA				
EPHEMEROPTERA				
CAENIDAE	43	2	28	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	13	20	11	
BAETISCIDAE				
BAETISCA	8	1	10	
HEPTAGENIIDAE				
STENONEMA	2	8	17	
AMETROPIDAE				
TRICHOPTHYDOES	1	0	0	
ALL EPHEMEROPTERA				1129

B-552

MACROZOEBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 7 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS					

MICRASEMA					

HYDROPSYCHIDAE					
CHEUMATOPSYCHE					

HYDROPSYCHE					

LEPTOCERIDAE					
CERACLEA					

MYSTACIDES					

OECETIS					

SETODES					

POLYCENTROPODIDAE					
NEURECLIPSIS					

ALL TRICHOPTERA					1343
ACARINA					
GASTROPODA					
AMNICOLA					69

ELIMIA LIVESCENS					

PHYSA					

ALL GASTROPODA					193
PELECYPODA					
SPHAERIIDAE					
PISIDIUM					

SPHAERIUM					

ALL SPHAERIIDAE					21
ALL PELECYPODA					21

10/17/84

ST. CLAIR RIVER TRANSECT 8 STATION 1

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PORIFERA				
SPONGILLA				

ALL PORIFERA	+	0	0	+
CNIDARIA				
HYDRA				

ALL CNIDARIA	53	24	61	950
TRICLADIDA				
NEMERTINEA	5	5	0	69
NEMATODA	0	3	0	21
HIRUDINEA				
ERPOBDELLIDAE				
GLOSSIPHONIIDAE	1	0	2	
GLOSSIPHONIA COMPLANATA	1	0	0	

ALL HIRUDINEA	86	116	68	1859
OLIGOCHAETA				
NAIS				

OLIGOCHAETA				
NAIS	24	32	33	28

SPIROSPERMA	265	182	219	

STYLARIA	23	0	0	

OTHER	108	75	77	
ALL OLIGOCHAETA				7155

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 8 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	893	1193	961	20984
ALL POLYCHAETA				20984
CLADOCERA				
BOSMINA	0	0	2	
DAPHNIA	1	1	3	
HOLOPEIDIUM	5	2	0	
ALL CLADOCERA				96
COPEPODA				
EPISHURA LACUSTRIS	0	0	1	
MACROCYCLOPS	0	16	0	
ALL COPEPODA				117
AMPHIPODA				
GAMMARUS	196	113	148	
HYALELLA AZTECA	4	0	3	
ALL AMPHIPODA				3195
ISOPODA				
ASELLUS	3	0	3	41
ALL ISOPODA				41
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	196	102	188	3347
ALL DIPTERA				3354

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	157	54	121	

EPHEMERIDAE				
HEXAGENIA	76	17	70	

HEPTAGENIIDAE				
STENONEMA	0	3	1	

ALL EPHEMEROPTERA				3436
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	0	1	

ALL COLEOPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	0	

LEPTOCERIDAE				
OECETIS	0	1	2	

SETODES	2	0	0	

TRIAENODES	0	0	1	

POLYCENTROPODIDAE				
POLYCENTROPUS	0	3	1	

ALL TRICHOPTERA				76
ACARINA				
1	2	0	21	
GASTROPODA				
AMNICOLA	4	2	2	

ELIMIA LIVESCENS	10	19	9	

GYRAULUS	1	0	0	

PHYSA	6	5	1	

ALL GASTROPODA				406

B-556

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 8 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./50. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	14	43	

SPHAERIUM	1	4	2	

ALL SPHAERIIDAE				613
ALL PELECYPODA				613

B-557

10/17/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

ST. CLAIR RIVER TRANSECT 8 STATION 2

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CNIDARIA				
HYDRA	698	375	191	8705
ALL CNIDARIA				8705
RHABDOCELA	33	43	12	606
TRICLADIDA	22	4	10	248
NEMERTINEA	0	35	0	241
NEMATODA	19	41	17	530
OLIGOCHAETA				
NAIS	2	0	17	
SPIROPERMA	30	5	60	
STYLARIA	332	266	296	
OTHER	222	91	99	9779
ALL OLIGOCHAETA				
POLYCHAETA				
MANAYUNKIA SPECIOSA	47	173	119	2335
ALL POLYCHAETA				2335

B-558

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CLADOCERA				
BOSMINA	1	0	1	

DAPHNIA	1	0	0	

HOLOPEIDIUM	9	8	9	

ALL CLADOCERA				200
COPEPODA				
DIAPYCNUS	0	8	0	

HARPACTICOIDA	0	8	0	

ALL COPEPODA				110
OSTRACODA	0	12	1	90
AMPHIPODA				
GAMMARUS	89	126	42	

HYALELLA AZTECA	55	20	35	

ALL AMPHIPODA				2527
ISOPODA				
ASELLUS	2	1	0	21

ALL ISOPODA				21
DIPTERA				
CERATOPOGONIDAE	2	1	3	
CHIRONOMIDAE	150	146	119	2858
ALL DIPTERA				2899

B-559

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 8 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	38	122	34	
EPHEMERIDAE				
HEXAGENIA	108	235	180	
ALL EPHEMEROPTERA				4938
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	0	0	1	
LEPTOCERIDAE				
CERACLEA	1	0	0	
DECETIS	0	0	2	
SETODES	0	1	0	
TRIAENODES	0	1	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	2	1	4	
ALL TRICHOPTERA				90
OONATA				
COENAGRIONIDAE	1	1	0	14
ACARINA	2	2	3	48

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 8 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
ANNICOLA	29	39	22	
ELIMIA LIVESCENS	7	14	3	
GYRAULUS	9	9	4	
PHYSA	38	17	17	
VALVATA TRICARINATA	0	4	0	
ALL GASTROPODA				1460
PELECYPODA				
SPHAERIIDAE	15	21	20	386
PISIDIUM				
ALL PELECYPODA				386

B-561

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT 8	STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	29	106	474		4194
ALL CNIDARIA					4194
RHABDOCOELA	3	8	47		399
NEMERTINEA	8	0	5		90
NEMATODA	13	17	30		413
OLIGOCHAETA					
SPIROSPERMA	25	20	49		
STYLARIA	2	0	10		
OTHER					
ALL OLIGOCHAETA	347	337	319		7637
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	9	32		282
ALL POLYCHAETA					282
CLADOCERA					
BOSMINA	0	1	20		
DAPHNIA	0	4	2		
HOLOPEIDIUM	8	20	37		
ALL CLADOCERA					634

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
EPISHURA LACUSTRIS	0	0	6		
HARPACTICOIDA	2	0	8		
ALL COPEPODA					110
OSTRACODA					
AMPHIPODA	2	6	2		69
GAMMARUS	2	1	39		
HYALELLA AZTECA	0	0	2		
ALL AMPHIPODA					303
DIPTERA					
CERATOPOGONIDAE	2	0	0		
CHIRONOMIDAE	341	299	336		6721
ALL DIPTERA					6735
EPHEMEROPTERA					
CAENIDAE	3	7	22		
CAENIS					
EPHEMERIDAE					
HEXAGENIA	90	266	148		
ALL EPHEMEROPTERA					3691

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 8 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
BRACHYCENTRIDAE					
BRACHYCENTRUS	0	0	1		
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	0	1		
HYDROPSYCHE	0	0	2		
LEPTOCERIDAE					
DECETIS	0	1	0		
POLYCENTROPODIDAE					
NEURECLIPSIS	0	1	0		
ALL TRICHOPTERA					41
ODONATA					
GOMPHIDAE					
GOMPHUS	0	0	1		7
ALL ODONATA					7
ACARINA	2	0	4		41
GASTROPODA					
AMNICOLA	12	3	36		
GYRAULUS	0	0	7		
PHYSA	0	1	9		
ALL GASTROPODA					468
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	8	46	11		448
UNIONIDAE	0	2	0		
ALL PELECYPODA					461

B-564

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT 9 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		1	0	1	14
HYDRA					

ALL CNIDARIA					14
RHABDOCOELA		2	0	0	14
NEMATODA		3	5	1	62
OLIGOCHAETA					
NAIS		0	0	2	

SPIROSPERMA		1	1	2	

STYLARIA		2	0	5	

OTHER		20	9	41	572
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	0	4	28

ALL POLYCHAETA					28
CLADOCERA					
BOSMINA		6	14	5	

DAPHNIA		19	24	16	

HOLOPEDIIUM		10	11	11	

ALL CLADOCERA					799

B-565

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 9 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	1	5	1		

DIAPYCNUS	10	15	7		

EPISHURA LACUSTRIS	4	3	1		

HARPACTICOIDA	1	0	0		

ALL COPEPODA					331
AMPHIPODA					
GAMMARUS	6	0	4		

HYALELLA AZTECA	0	0	4		

ALL AMPHIPODA					96
ISOPODA					
LIRCEUS	0	0	3		21

ALL ISOPODA					21
TERRESTRIAL INSECT					
DIPTERA					
CERATOPOGONIDAE	4	2	11		
CHIRONOMIDAE	3	3	53		406
ALL DIPTERA					523
EPHEMEROPTERA					
CAENIDAE	0	0	2		

EPHEMERIDAE					
HEXAGENIA	6	1	0		

HEPTAGENIIDAE					
STENONEMA	0	0	1		

ALL EPHEMEROPTERA					69

B-566

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 9 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
ANNICOLA	5	0	0	

GYRAULUS	0	0	1	

PHYSA	1	0	0	

ALL GASTROPODA				48
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	0	3	41

ALL PELECYPODA				41

B-567

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT 9	STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	0	1		7
ALL CNIDARIA					7
NEMATODA					
OLIGOCHAETA	1	0	2		21
SPIROSPERMA	1	0	0		
OTHER					
ALL OLIGOCHAETA	9	8	14		220
CLADOCERA					
BOSMINA	14	2	4		
DAPHNIA	6	3	7		
EURYCERCUS LAMELLATUS	1	0	0		
HOLOPEDIIUM	14	13	5		
ALL CLADOCERA					475
COPEPODA					
CYCLOPS BICUSPIDATUS	0	2	1		
DIAPTOMUS	9	0	10		
EPISHURA LACUSTRIS	1	0	0		
HARPACTICOIDA	1	0	1		
ALL COPEPODA					172
DIPTERA					
CERATOPOGONIDAE	2	2	2		
CHIRONOMIDAE	8	5	2		103
ALL DIPTERA					145

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	7
ALL TRICHOPTERA				
GASTROPODA				
PHYSA	0	1	0	7
ALL GASTROPODA				7

B-569

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT	9	STATION 3		
TAXON				GRAB COUNTS	ESTIMATED
				1 2 3	NO./SQ. METER
CNIDARIA					
HYDRA					

ALL CNIDARIA				194 0 535	5020
					5020
RHABDOCOELA				4 1 6	76
NEMERTINEA				0 1 0	7
NEMATODA				4 9 9	152
OLIGOCHAETA					
SPIROSPERMA				4 1 11	

STYLARIA				31 0 40	
OTHER				36 16 156	
ALL OLIGOCHAETA					2032
POLYCHAETA					
MANAYUNKIA SPECIOSA				57 2 89	1019

ALL POLYCHAETA					1019
CLADOCERA					
BOSMINA				0 18 0	

DAPHNIA				4 5 16	

HOLOPEDIIUM				14 19 40	

ALL CLADOCERA					799

B-570

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	0	
DIAPTOMUS	4	1	0	
EPISHURA LACUSTRIS	0	1	16	
HARPACTICOIDA	0	2	8	
ALL COPEPODA				234
AMPHIPODA				
GAMMARUS	48	0	11	
HYALELLA AZTECA	3	0	0	
ALL AMPHIPODA				427
DIPTERA				
CERATOPOGONIDAE	6	2	1	
CHIRONOMIDAE	52	12	69	916
EMPIDIDAE	0	0	2	
ALL DIPTERA				992
EPEMEROPTERA				
CAENIDAE	7	0	0	
CAENIS				
EPEMERIDAE				
HEXAGENIA	25	0	2	
BAETISCIDAE				
BAETISCA	0	0	1	
ALL EPEMEROPTERA				241
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	1	
LEPTOCERIDAE				
QECETIS	1	0	0	
ALL TRICHOPTERA				21

B-571

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 9 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	5	0	0	0	34
GASTROPODA					
AMNICOLA	0	0	3		
ELIMIA LIVESCENS	2	0	1		
GYRAULUS	0	0	2		
PHYSA	2	0	0		
ALL GASTROPODA					69
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	22	2	26		344
ALL PELECYPODA					344

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
ST. CLAIR RIVER	TRANSECT 10 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./50. METER
NEMATODA	0	0	2	14
OLIGOCHAETA	3	0	1	28
CLADOCERA	2	0	2	
BOSMINA				
DAPHNIA	11	17	12	
HOLOPEDIUM	8	18	10	
ALL CLADOCERA				551
COPEPODA				
DIPTOMUS	4	2	1	
EPISHURA LACUSTRIS	1	2	0	
ALL COPEPODA				69
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	1	0	1	14
DIPTERA				
CERATOPOGONIDAE	0	0	5	
CHIRONOMIDAE	3	8	3	96
ALL DIPTERA				131

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 10 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

ALL PELECYPODA	1	3	2	41
				41

B-574

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT 10 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		18	13	24	379
HYDRA					
ALL CNIDARIA					379
RHABDOCOELA		13	41	33	599
TRICLADIDA		1	1	0	14
NEMATODA		17	8	13	262
HIRUDINEA					
PISCICOLIDAE					
PISCICOLA		1	0	0	
ALL HIRUDINEA					7
OLIGOCHAETA		21	11	12	
SPIROSPERMA					
STYLARIA		44	35	98	
OTHER		300	77	110	
ALL OLIGOCHAETA					4876
POLYCHAETA					
MANAYUNKIA SPECIOSA		16	1	24	282
ALL POLYCHAETA					282
CLADOCERA					
BOSMINA		9	4	4	
DAPHNIA		8	6	12	
HOLOPEIDIUM		8	8	14	
ALL CLADOCERA					503

B-575

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
TRANSECT 10 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
DIAPYCNUS	0	1	0		

EPISHURA LACUSTRIS	0	2	0		

HARPACTICOIDA	8	0	0		

ALL COPEPODA					76
OSTRACODA	8	1	3		83
AMPHIPODA					
GAMMARUS	28	28	24		

HYALELLA AZTECA	8	8	24		

ALL AMPHIPODA					826
ISOPODA					
ASELLUS	0	0	1		7

ALL ISOPODA					7
TERRESTRIAL INSECT	2	4	0		41
DIPTERA					
CERATOPOGONIDAE	10	13	9		
CHIRONOMIDAE	162	259	207		4325
EMPHIDIDAE	1	0	0		
ALL DIPTERA					4552

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
EPHEMEROPTERA				
CAENIDAE				
CAENIS	20	37	22	
EPHEMERIDAE				
HEXAGENIA	17	28	21	
BAETISCIDAE				
BAETISCA	5	2	4	
ALL EPHEMEROPTERA				1081
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	1	0	2	
LEPTOCERIDAE				
MYSTACIDES	1	1	0	
NECTOPSYCHE	2	0	0	
OECETIS	3	0	4	
SETODES	0	2	0	
POLYCENTROPIDIDAE				
NEURECLIPSIS	0	0	1	
POLYCENTROPUS	1	0	1	
ALL TRICHOPTERA				131
ACARINA				
9	13	10		220
GASTROPODA				
AMNICOLA	11	12	20	
ELIMIA LIVESCENS	19	10	12	
GYRAULUS	6	8	15	
PHYSA	6	3	7	
VALVATA TRICARINATA	0	1	1	
ALL GASTROPODA				902

B-577

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 10 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	44	10	43	668

UNIONIDAE	1	0	0	
ALL PELECYPODA				675

B-578

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/17/84
ST. CLAIR RIVER	TRANSECT 10 STATION 3	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		561	465	734	12121

ALL CNIDARIA					12121
RHABDOCOELA		30	28	38	661
TRICLADIDA		4	5	8	117
NEMATODA		19	18	32	475
OLIGOCHAETA					
NAIS		0	8	1	

SPIROSPERMA		18	3	34	

STYLARIA		37	118	113	

OTHER		199	94	201	5688
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		83	9	55	1012

ALL POLYCHAETA					1012

B-579

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/17/84

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CLADOCERA				
BOSMINA	9	1	1	

DAPHNIA	2	0	11	

EURYCERCUS LAMELLATUS	1	0	1	

HOLOPEDIDUM	1	32	4	

ILYOCRYPTUS	1	1	3	

ALL CLADOCERA				468
COPEPODA				
DIAPTOMUS	0	0	1	

EPISHURA LACUSTRIS	0	0	1	

HARPACTICOIDA	0	0	1	

ALL COPEPODA				21
OSTRACODA	12	0	24	248
AMPHIPODA				
GAMMARUS	195	71	337	

HYALELLA AZTECA	10	13	8	

ALL AMPHIPODA				4366
DIPTERA				
CERATOPOGONIDAE	13	1	2	
CHIRONOMIDAE	199	238	160	4111
ALL DIPTERA				4222

B-580

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 10 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	30	9	51	
EPHEMERIDAE				
HEXAGENIA	240	58	212	
ALL EPHEMEROPTERA				4132
LEPIDOPTERA				
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	1	0	0	
HYDROPSYCHE	2	0	0	
LEPTOCERIDAE				
CERACLEA	0	1	1	
DECETIS	1	0	1	
TRIAENODES	0	1	0	
POLYCENTROPIDIDAE				
POLYCENTROPUS	1	0	1	
ALL TRICHOPTERA				69
ACARINA				
ACARINA	5	0	4	62
GASTROPODA				
AMNICOLA	57	89	100	
ELIMIA LIVESCENS	2	3	2	
GYRAULUS	3	27	18	
PHYSA	6	18	24	
ALL GASTROPODA				2403

B-581

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/17/84
TRANSECT 10 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	67	13	37	806

ALL PELECYPODA				806

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR	TRANSECT 11	STATION 1			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA					
HYDRA		2	0	4	41

ALL CNIDARIA					41
RHABDOCELA		2	1	3	41
TRICLADIDA		0	2	1	21
NEMATODA		24	18	27	475
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA STAGNALIS		0	0	2	

ALL HIRUDINEA					14
OLIGOCHAETA					
SPIROSPERMA		28	13	12	

STYLARIA		0	0	1	

OTHER		54	35	58	
ALL OLIGOCHAETA					1384
POLYCHAETA					
MANAYUNKIA SPECIOSA		372	171	306	5847

ALL POLYCHAETA					5847
CLADOCERA					
DAPHNIA		8	12	19	

EURYCERCUS LAMELLATUS		2	4	2	

HOLOPEDIUM		3	1	7	

ALL CLADOCERA					399

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 11 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
HARPACTICOIDA	2	7	17		179
ALL COPEPODA					179
OSTRACODA	19	34	12		448
AMPHIPODA					
GAMMARUS	17	21	0		262
ALL AMPHIPODA					262
DIPTERA					
CHIRONOMIDAE	15	24	19		399
EPHEMEROPTERA					
EPHEMERIDAE	19	26	15		
HEXAGENIA					
ALL EPHEMEROPTERA					413
TRICHOPTERA					
LEPTOCERIDAE	2	1	6		
DECETIS					
ALL TRICHOPTERA					62
ACARINA	0	0	1		7
GASTROPODA					
AMNICOLA	1	1	1		
ELIMIA LIVESCENS	2	3	1		
GYRAULUS	0	0	1		
VALVATA TRICARINATA	2	0	1		
ALL GASTROPODA					90

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 11 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

ALL PELECYPODA	14	42	13	475
				475

B-585

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR		TRANSECT 11 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	1	0	1	14	
TRICLADIDA	1	2	0	21	
NEMATODA	76	107	134	2183	
OLIGOCHAETA	49	60	70	1233	
POLYCHAETA	17	19	18	372	
MANAYUNKIA SPECIOSA				372	
ALL POLYCHAETA					
CLADOCERA	6	10	17		
DAPHNIA	1	1	2		
HOLOPEDIDUM				255	
ALL CLADOCERA					
COPEPODA	1	3	6		
HARPACTICOIDA	0	1	0		
LIMNOCALANUS	2	3	7		
MACROCYCLOPS				158	
ALL COPEPODA	1	6	3	69	
OSTRACODA					

B-586

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 11 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS					69
ALL AMPHIPODA					69
DIPTERA					
CHIRONOMIDAE	26	25	19		482
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	20	25	28		
ALL EPHEMEROPTERA					510
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	1	3	2		41
ALL TRICHOPTERA					
ACARINA	0	1	0		7
GASTROPODA					
AMNICOLA	0	1	0		
ELIMIA LIVESCENS	0	2	1		
PLEUROCERA ACUTA	1	0	0		
ALL GASTROPODA					34
PELECYPODA					
SPHAERIIDAE	34	55	40		
PISIDIUM					
SPHAERIUM	3	1	5		950
ALL SPHAERIIDAE					
UNIONIDAE					
ANODONTA GRANDIS	0	0	1		
ALL PELECYPODA					957

B-587

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR		TRANSECT 11 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	1	10	8	131	
TRICLADIDA	0	0	1	7	
NEMATODA	168	210	305	4704	
HIRUDINEA					
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	3	0	5		
ALL HIRUDINEA				55	
OLIGOCHAETA					
SPIROSPERMA	0	1	0		
OTHER					
ALL OLIGOCHAETA	788	777	935	17224	
POLYCHAETA					
MANAYUNKIA SPECIOSA	37	16	8	427	
ALL POLYCHAETA				427	
CLADOCERA					
DAPHNIA	13	1	16		
HOLOPEDIIUM	3	0	8		
ALL CLADOCERA				282	
COPEPODA					
HARPACTICOIDA	0	1	1		
MACROCYCLOPS	5	0	8		
ALL COPEPODA				103	

B-588

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 11 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	0	1	8	62	
AMPHIPODA					
GAMMARUS	2	1	1	28	
ALL AMPHIPODA				28	
DIPTERA					
CERATOPOGONIDAE	1	0	0		
CHIRONOMIDAE	25	26	26	530	
ALL DIPTERA				537	
EPHEMEROPTERA					
EPHEMERIDAE	27	16	17		
HEXAGENIA					
ALL EPHEMEROPTERA				413	
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	1	0	0		
ALL TRICHOPTERA				7	
PELECYPODA					
SPHAERIIDAE	75	127	108		
PISIDIUM					
SPHAERIUM	1	2	2		
ALL SPHAERIIDAE				2169	
ALL PELECYPODA				2169	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR	TRANSECT 12 STATION 1	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA		0	8	0	55
HYDRA					
ALL CNIDARIA					55
RHABDOCOELA		0	3	1	28
TRICLADIDA		1	0	0	7
NEMATODA		23	19	32	510
HIRUDINEA					
GLOSSIPHONIIDAE		0	0	1	
GLOSSIPHONIA COMPLANATA					
HELOBDELLA STAGNALIS		1	0	0	
ALL HIRUDINEA					14
OLIGOCHAETA		1	3	2	
SPIROSPERMA					
OTHER		58	49	33	1005
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		219	251	209	4676
ALL POLYCHAETA					4676
CLADOCERA					
DAFHNIA		8	16	13	
EURYCERCUS LAMELLATUS		2	1	2	
HOLOPEDIIUM		25	28	27	
ALL CLADOCERA					840

B-590

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 12 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
HARPACTICOIDA	4	7	2		

MACROCYCLOPS	3	2	3		

ALL COPEPODA					145
OSTRACODA					
	13	34	34		558
AMPHIPODA					
GAMMARUS	9	13	9		213

ALL AMPHIPODA					213
DIPTERA					
CHIRONOMIDAE	14	30	27		489
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	19	31	24		

ALL EPHEMEROPTERA					510
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	3	4	1		

ALL TRICHOPTERA					55
ACARINA					
	1	0	1		14
GASTROPODA					
AMNICOLA					

ELIMIA LIVESCENS					

VALVATA TRICARINATA	2	0	2		

ALL GASTROPODA	1	0	1		

ALL GASTROPODA					62

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/10/84

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

SPHAERIUM				

ALL SPHAERIIDAE	22	17	12	
UNIONIDAE	0	1	0	

ALL PELECYPODA	0	1	0	358
				365

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
LAKE ST. CLAIR	TRANSECT 12 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
RHABDOCOELA	1	0	2	21
TRICLADIDA	0	1	0	7
NEMATODA	12	46	25	572
OLIGOCHAETA				
SPIROSPERMA	1	0	2	

OTHER	91	155	68	2183
ALL OLIGOCHAETA				
POLYCHAETA				
MANAYUNKIA SPECIOSA	10	6	15	213

ALL POLYCHAETA				213
CLADOCERA				
DAPHNIA	3	7	12	

HOLOPEDIUM	4	14	12	

ALL CLADOCERA				358
COPEPODA				
HARPACTICOIDA	0	2	0	

MACROCYCLOPS	3	1	3	

ALL COPEPODA				62
OSTRACODA	1	2	0	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 12 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	3	0	28

ALL AMPHIPODA				28
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	18	32	21	489
ALL DIPTERA				496
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	19	30	18	

ALL EPHEMEROPTERA				461
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	45	51	26	

SPHAERIUM	4	0	1	

ALL SPHAERIIDAE				875
UNIONIDAE				
PROPTERA ALATA	0	1	0	

ALL PELECYPODA				881

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR	TRANSECT 12 STATION 3				
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCELA	0	2	0	14	
TRICLADIDA	0	1	0	7	
NEMATODA	14	20	13	324	
HIRUDINEA					
GLOSSIPHONIIDAE					
PLACOBDELLA MONTIFERA	0	0	1		

ALL HIRUDINEA				7	
OLIGOCHAETA					
SPIROSPERMA	1	0	0		

OTHER	145	108	67	2211	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	12	22	32	455	

ALL POLYCHAETA				455	
CLADOCERA					
DAPHNIA	12	17	8		

HOLOPEDIIUM	7	3	8		

ALL CLADOCERA				379	
COPEPODA					
HARPACTICOIDA	0	1	2		

MACROCYCLOPS	3	2	4		

ALL COPEPODA				83	

B-595

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 12 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
OSTRACODA	0	2	0	14
AMPHIPODA				
GAMMARUS	1	4	3	55

ALL AMPHIPODA				55
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	22	25	11	399
ALL DIPTERA				406
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	21	21	20	

ALL EPHEMEROPTERA				427
TRICHOPTERA				
LEPTOCERIDAE				
DECETIS	1	0	4	

ALL TRICHOPTERA				34
ACARINA				

ALL ACARINA	0	0	1	7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	56	40	36	

CPHAERIUM	1	1	2	

ALL SPHAERIIDAE				937
ALL PELECYPODA				937

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR	TRANSECT 13 STATION 1				
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
-----	-----			-----	
CNIDARIA					
HYDRA	0	1	0		7

ALL CNIDARIA					7
RHABDOCOELA	1	1	1		21
NEMERTINEA	1	1	0		14
NEMATODA	14	38	22		510
OLIGOCHAETA					
SPIROSPERMA	0	4	1		

OTHER	24	10	9		331
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	63	106	55		1543

ALL POLYCHAETA					1543
CLADOCERA					
ALONA	1	0	0		

DAPHNIA	1	4	0		

EURYCERCUS LAMELLATUS	0	2	1		

HOLOPEDIIUM	2	13	2		

POLYPHEMUS PEDICULUS	0	1	0		

ALL CLADOCERA					186

8-587

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 13 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
HARPACTICOIDA					
MACROCYCLOPS	0	1	5		
ALL COPEPODA	0	1	0		48
OSTRACODA					
AMPHIPODA	4	11	3		124
GAMMARUS					
ALL AMPHIPODA	6	1	0		48
DIPTERA					
CHIRONOMIDAE	28	22	25		516
EPHEMEROPTERA					
EPHEMERIDAE	30	27	28		
HEXAGENIA					
HEPTAGENIIDAE					
STENONEMA	1	0	0		
ALL EPHEMEROPTERA					592
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	1	2	2		
ALL TRICHOPTERA					34
ACARINA	0	1	0		7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 13 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
ANNICOLA	1	4	5		
ELIMIA LIVESCENS	1	1	0		
GYRAULUS	2	0	0		
VALVATA SINCERA	0	9	1		
VALVATA TRICARINATA	0	1	0		
ALL GASTROPODA					172
PELECYPODA					
SPHAERIIDAE	5	19	16		
PISIDIUM	4	0	0		
SPHAERIUM					
ALL SPHAERIIDAE					303
UNIONIDAE	1	0	0		
LAMPISILIS	0	1	0		
OTHER					
ALL PELECYPODA					317

B-599

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR	TRANSECT 13 STATION 2	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
RHABDOCOELA		0	1	0	7
TRICLADIDA		0	0	1	7
NEMATODA		18	24	26	468
JLIGOCHAETA		99	90	93	1942
POLYCHAETA					
MANAYUNKIA SPECIOSA		6	17	8	213
ALL POLYCHAETA					213
CLADOCERA					
DAPHNIA		1	6	1	
HOLOPEDIIUM		9	4	10	
ALL CLADOCERA					213
COPEPODA					
HARPACTICOIDA		0	1	2	
MACROCYCLOPS		5	1	3	
ALL COPEPODA					83
OSTRACODA		0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 13 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	2	0	0		14
ALL AMPHIPODA					14
TERRESTRIAL INSECT					
DIPTERA					
CHIRONOMIDAE	22	27	28		530
EPHEMEROPTERA					
EPHEMERIDAE					
HEXAGENIA	22	21	19		
ALL EPHEMEROPTERA					427
TRICHOPTERA					
LEPTOCERIDAE					
OECETIS	2	1	1		
ALL TRICHOPTERA					28
GASTROPODA					
ELINIA LIVESCENS	0	1	0		7
ALL GASTROPODA					7
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	45	46	41		
SPHAERIUM	2	3	0		
ALL SPHAERIIDAE					943
ALL PELECYPODA					943

B-601

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
LAKE ST. CLAIR		TRANSECT 13 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	3	3	0	41	
NEMATODA	49	8	12	475	
OLIGOCHAETA	410	47	42	3436	
POLYCHAETA	23	0	0	158	
MANAYUNKIA SPECIOSA					
ALL POLYCHAETA				158	
CLADOCERA					
BOSMINA	2	0	2		
DAPHNIA	1	0	1		
HOLOPEDIUM	6	2	1		
ALL CLADOCERA				103	
COPEPODA					
EPISHURA LACUSTRIS	0	0	1		
HARPACTICOIDA	2	0	0		
MACROCYCLOPS	11	0	1		
MESOCYCLOPS	1	0	0		
ALL COPEPODA				110	
OSTRACODA	3	0	0		
					21

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 13 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
AMPHIPODA				
GAMMARUS	4	1	0	34
ALL AMPHIPODA				34
DIPTERA				
CHIRONOMIDAE	45	6	10	420
EPHEMEROPTERA				
EPHEMERIDAE	23	14	14	
HEXAGENIA				
ALL EPHEMEROPTERA				351
TRICHOPTERA				
LEPTOCERIDAE				
DECETIS	0	0	2	
ALL TRICHOPTERA				14
GASTROPODA				
CAMPLOMA	1	0	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	82	6	8	
SPHAERIUM	1	0	1	
ALL SPHAERIIDAE				675
ALL PELECYPODA				675

B-603

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 14 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA	+	+	+	+	
SPONGILLA					

ALL PORIFERA				0	
CNIDARIA					
HYDRA	57	36	28	840	

ALL CNIDARIA				840	
TRICLADIDA	5	4	9	124	
NEMERTINEA	76	72	51	1370	
NEMATODA	5	1	0	41	
BRYOZOA	0	+	+	+	
OLIGOCHAETA					
SPIROSPERMA	0	1	0		

OTHER	19	5	6	213	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	2	0	14	

ALL POLYCHAETA				14	
OSTRACODA	0	0	1	7	

B-604

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 14 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
AMPHIPODA					
GAMMARUS	1	2	3	41	
ALL AMPHIPODA				41	
DIPTERA					
CERATOPOGONIDAE	1	0	0		
CHIRONOMIDAE	78	29	126	1605	
ALL DIPTERA				1611	
EPEMEROPTERA					
BAETISCIDAE	0	1	2		
BAETISCA					
ALL EPEMEROPTERA				21	
TRICHOPTERA					
HYDROPSYCHIDAE	26	22	72		
CHEMATOPSYCHE					
HYDROPSYCHE	83	54	152		
LEPTOCERIDAE	1	2	0		
CERACLEA					
ALL TRICHOPTERA				2837	
ACARINA	2	1	0		
GASTROPODA					
AMNICOLA	12	23	3		
ELIMIA LIVESCENS	37	84	21		
FERISSIA	2	1	1		
GYRAULUS	6	2	1		
PHYSA	2	0	5		
ALL GASTROPODA				1377	

B-605

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/ 8/84
TRANSECT 14 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
-----				-----
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	40	25	15	

SPHAERIUM	6	6	0	

ALL SPHAERIIDAE				634
UNIONIDAE				
TRUNCILLA TRUNCATA	1	1	1	

OTHER	0	2	0	
ALL PELECYPODA				668

8-60C

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 14 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
NEMERTINEA	15	3	7	172	
NEMATODA	0	1	0	7	
OLIGOCHAETA					
SPIROSPERMA	2	1	0		

OTHER	30	23	16	496	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	4	2	9	103	

ALL POLYCHAETA				103	
CLADOCERA					
BOSMINA	1	0	0	7	

ALL CLADOCERA				7	
COPEPODA					
DIAPTOMUS	1	0	0	7	

ALL COPEPODA				7	
AMPHIPODA					
GAMMARUS	3	2	3	55	

ALL AMPHIPODA				55	
DIPTERA					
CHIRONOMIDAE	0	1	1	14	
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	1	1	2		

ALL EPHEMEROPTERA				28	

B-607

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/ 9/84
TRANSECT 14 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	3	4	37	
ALL TRICHOPTERA				303
ACARINA				
	2	0	0	14
GASTROPODA				
AMNICOLA	6	1	4	
ELIMIA LIVESCENS	1	1	5	
FERISSIA	0	1	0	
ALL GASTROPODA				131
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	8	4	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				124
ALL PELECYPODA				124

B-608

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 14 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
NEMERTINEA	0	2	2	28	
NEMATODA	6	2	6	96	
OLIGOCHAETA					
BRANCHIURA SOWERBYI	0	1	1		

SPIROSPERMA	1	4	3		

OTHER					
ALL OLIGOCHAETA	48	41	55	1061	
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	2	3	34	

ALL POLYCHAETA				34	
AMPHIPODA					
GAMMARUS	1	0	0	7	

ALL AMPHIPODA				7	
TERRESTRIAL INSECT	1	0	0	7	
DIPTERA					
CHIRONOMIDAE	2	3	4	62	
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	0	0		

ALL TRICHOPTERA				7	

B-609

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 14 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
ELIMIA LIVESCENS					
ALL GASTROPODA	9	5	5		131
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	6	2	4		
SPHAERIUM	2	0	1		
ALL SPHAERIIDAE					103
ALL PELECYPODA					103

B-610

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
DETROIT RIVER		TRANSECT 15 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PORIFERA	+	+	+	+	
SPONGILLA					

ALL PORIFERA					0
CNIDARIA					
HYDRA	35	30	22	599	

ALL CNIDARIA				599	
RHABDOCOELA	1	0	0	7	
TRICLADIDA	16	10	4	207	
NEMERTINEA	9	5	2	110	
NEMATODA	20	8	15	296	
BRYOZOA	+	+	0	+	
OLIGOCHAETA					
SPIROSPERMA	54	17	17		

STYLARIA	2	1	0		

OTHER					
ALL OLIGOCHAETA	32	30	33		1281

MACROZOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 15 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
POLYCHAETA				
MANAYUNKIA SPECIOSA	6	1	0	48
ALL POLYCHAETA				48
COPEPODA				
DIAPTOMUS	0	2	2	28
ALL COPEPODA				28
AMPHIPODA				
GAMMARUS	25	35	46	730
ALL AMPHIPODA				730
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	223	421	440	7465
EPHEMEROPTERA				
CAENIDAE	19	9	8	
CAENIS				
EPHEMERIDAE				
HEXAGENIA	1	0	0	
BAETISCIDAE				
BAETISCA	1	1	1	
ALL EPHEMEROPTERA				275

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 15 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE				
HYDROPSYCHE				
LEPTOCERIDAE				
CERACLEA				
OCETIS				
SETODES				
RHYACOPHILIDAE				
PROTOPTILA				
ALL TRICHOPTERA				5792
ACARINA				7
GASTROPODA				
AMNICOLA				
BITHYNIA				
ELINIA LIVESCENS				
GYRAULUS				
PHYSA				
ALL GASTROPODA				1171
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				
SPHAERIUM				
ALL SPHAERIIDAE				916
ALL PELECYPODA				916

B-613

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/10/84
TRANSECT 15 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	3	0	0	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
TRICHOPTERA	1	0	0	
HYDROPSYCHIDAE	183	79	92	
CHEUMATOPSYCHE				
HYDROPSYCHE	11	2	4	
ALL TRICHOPTERA				2562
GASTROPODA				
AMNICOLA	0	0	4	
ELIMIA LIVESCENS	31	10	40	
ALL GASTROPODA				585
PELECYPODA				
SPHAERIIDAE	15	6	36	
PISIDIUM				
SPHAERIUM	3	0	2	
ALL SPHAERIIDAE				427
UNIONIDAE				
LAMPUSILIS RADIATA SILIQUOIDEA	0	0	1	
OTHER	0	0	2	
ALL PELECYPODA				448

B-615

10/10/84

DETROIT RIVER **TRANSECT 15 STATION 3**

B-616

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/10/84
TRANSECT 15 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	2	1	0		21
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	8	2	6		

ALL EPHEMEROPTERA					110
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE					

HYDROPSYCHE	700	210	153		

LEPTOCERIDAE	87	16	6		
CERACLEA					

LEPTOCERIDAE	2	0	1		
CERACLEA					

DECETIS	1	0	0		

RHYACOPHILIDAE					
PROTOPTILA	1	0	0		

ALL TRICHOPTERA					8106
ACARINA					
GASTROPODA	1	0	0		7
AMNICOLA					

GASTROPODA	0	0	2		
AMNICOLA					

ELIMIA LIVESCENS	9	0	7		

ALL GASTROPODA					124
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	10	9	35		

SPHAERIUM	2	0	3		

ALL SPHAERIIDAE					406
UNIONIDAE					
ALL PELECYPODA	0	0	2		420

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 16 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	9	0	0	62	
HYDRA					

ALL CNIDARIA				62	
RHABDOCELA	23	27	35	585	
TRICLADIDA	2	0	1	21	
NEMATODA	148	57	57	1804	
HIRUDINEA					
ERPOBDELLIDAE	1	1	1		
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	3	1	0		

ALL HIRUDINEA				48	
OLIGOCHAETA					
NAIS	0	0	4		

SPIROSPERMA	0	0	1		

STYLARIA	95	92	93		

OTHER	178	260	264		
ALL OLIGOCHAETA				6797	
CLADOCERA					
SIDA CRYSTALLINA	12	1	8		

ALL CLADOCERA				145	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 16 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
OSTRACODA	0	0	1	7	
AMPHIPODA					
GAMMARUS	4	11	7		

HYALELLA AZTECA	14	4	12		

ALL AMPHIPODA				358	
ISOPODA					
ASELLUS	2	7	0	62	

ALL ISOPODA				62	
DIPTERA					
CERATOPOGONIDAE	4	1	0		
CHIRONOMIDAE	220	324	200	5124	
CULICIDAE					
CHAOBORUS	0	1	0		

ALL DIPTERA				5165	
EPHEMEROPTERA					
CAENIDAE	1	0	1		
CAENIS					

EPHEMERIDAE					
HEXAGENIA	4	1	0		

ALL EPHEMEROPTERA				48	
LEPIDOPTERA					
PYRALIDAE	1	0	0	7	

ALL LEPIDOPTERA				7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/ 9/84
TRANSECT 16 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE	1	0	0	
NECTOPSYCHE				

DECETIS	9	0	1	

POLYCENTROPODIDAE				
PHYLOCENTROPUS	4	3	1	

ALL TRICHOPTERA				131
GASTROPODA				
AMNICOLA	32	17	16	

GYRAULUS	85	48	35	

PHYSA	34	5	13	

PLEUROCERA ACUTA	0	0	1	

ALL GASTROPODA				1970
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	0	0	68

ALL PELECYPODA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 16 STATION 2			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
CNIDARIA		0	0	1	7
HYDRA					
ALL CNIDARIA					7
RHABDOCOELA		7	10	21	262
TRICLADIDA		17	2	10	200
NEMERTINEA		5	1	18	165
NEMATODA		134	69	190	2706
HIRUDINEA					
ERPOBDELLIDAE		1	0	0	
GLOSSIPHONIIDAE					
ACTINOBDELLA INEQUIANNUATA		1	0	0	
GLOSSIPHONIA HETEROCLITA		0	0	1	
ALL HIRUDINEA					21
OLIGOCHAETA					
SPIROSPERMA		1	8	9	
STYLARIA		11	0	1	
OTHER		168	81	289	
ALL OLIGOCHAETA					3912

B-621

MACROZOOBENTHOS PONAR GRAB COUNT DATA						10/ 9/84
TRANSECT 16 STATION 2 (CONT'D)						
TAXON	GRAB COUNTS			ESTIMATED		
	1	2	3	NO./SQ. METER		
CLADOCERA						
SIDA CRYSTALLINA	33	4	8			310
ALL CLADOCERA						310
COPEPODA						
HARPACTICOIDA	24	0	0			165
ALL COPEPODA						165
AMPHIPODA						
GAMMARUS	21	0	14			
HYALELLA AZTECA	6	2	0			
ALL AMPHIPODA						296
ISOPODA						
ASELLUS	6	0	11			117
ALL ISOPODA						117
TERRESTRIAL INSECT	1	0	0			7
DIPTERA						
CERATOPOGONIDAE	0	0	2			
CHIRONOMIDAE	101	77	74			1735
ALL DIPTERA						1749
EPHEMEROPTERA						
CAENIDAE	1	1	0			
CAENIS						
EPHEMERIDAE						
HEXAGENIA	19	27	8			
ALL EPHEMEROPTERA						386

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/ 9/84
TRANSECT 16 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	0	2	
POLYCENTROPIDIDAE				
PHYLOCENTROPUS	8	9	4	
POLYCENTROPUS	2	0	0	
ALL TRICHOPTERA				193
ACARINA				
	3	1	1	34
GASTROPODA				
AMNICOLA	19	2	40	
ELIMIA LIVESCENS	1	0	0	
GYRAULUS	1	0	1	
PHYSA	2	0	5	
PLEUROCERA ACUTA	1	1	6	
ALL GASTROPODA				544
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	23	50	37	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				764
UNIONIDAE	1	0	0	
ALL PELECYPODA				771

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 16 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	12	2	1	103	
NEMERTINEA	0	0	4	28	
NEMATODA	37	5	5	324	
OLIGOCHAETA					
SPIROSPERMA	11	20	1		
STYLARIA	0	0	1		
OTHER	87	109	80	2197	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	26	12	6	303	
ALL POLYCHAETA				303	
CLADOCERA					
BOSMINA	0	0	1		
EURYCERCUS LAMELLATUS	4	0	0		
SIDA CRYSTALLINA	1	0	0		
ALL CLADOCERA				41	
COPEPODA					
EPISHURA LACUSTRIS	1	0	0	7	
ALL COPEPODA				7	
AMPHIPODA					
GAMMARUS	0	1	0	7	
ALL AMPHIPODA				7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 16 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CERATOPOGONIDAE	1	1	0		
CHIRONOMIDAE	51	26	18		654
ALL DIPTERA					668
EPHEMEROPTERA					
CAENIDAE					
BRACHYCERCUS	0	1	0		
EPHEMERIDAE					
HEXAGENIA	18	1	6		

ALL EPHEMEROPTERA					179
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	0	2	0		

HYDROPSYCHE	0	1	1		

LEPTOCERIDAE					
OECETIS	7	5	1		

ALL TRICHOPTERA					117
ACARINA	3	0	0		21
GASTROPODA					
AMNICOLA	5	3	7		

PLEUROCERA ACUTA	3	0	1		

ALL GASTROPODA					131

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/ 9/84
TRANSECT 16 STATION 3 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	23	18	25	

SPHAERIUM	0	2	1	

ALL SPHAERIIDAE				475
UNIONIDAE				
LAMPUSILIS	0	1	0	

OTHER	1	1	0	
ALL PELECYPODA				496

B-626

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 17 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA	0	1	0	7	
HYDRA				7	

ALL CNIDARIA				7	
RHABDOCELA	5	6	10	145	
TRICLADIDA	2	1	2	34	
NEMERTINEA	4	10	0	96	
NEMATODA	165	143	209	3560	
HIRUDINEA					
ERPOBDELLIDAE	0	1	0	41	
GLOSSIPHONIIDAE					
HELOBDELLA ELONGATA	0	1	0		

HELOBDELLA STAGNALIS	0	2	2		

ALL HIRUDINEA				41	
OLIGOCHAETA					
SPIROSPERMA	19	13	2		

STYLARIA	8	11	8		

OTHER	209	257	228	5198	
ALL OLIGOCHAETA				5198	

B-627

MACROZOEBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 17 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
POLYCHAETA					
MANAYUNKIA SPECIOSA	10	12	26		331
ALL POLYCHAETA					331
CLADOCERA					
BOSMINA	3	0	0		
SIDA CRYSTALLINA	4	1	19		
ALL CLADOCERA					186
COPEPODA					
HARPACTICOIDA	36	215	0		
MACROCYCLOPS	1	0	0		
ALL COPEPODA					1735
OSTRACODA	0	0	1		7
AMPHIPODA					
GAMMARUS	4	5	7		
HYALELLA AZTECA	0	0	1		
ALL AMPHIPODA					117
ISOPODA					
ASELLUS	15	7	5		186
ALL ISOPODA					186
DIPTERA					
CHIRONOMIDAE	74	116	67		1770

B-628

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 17 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	1	0		

EPHEMERIDAE					
HEXAGENIA	7	10	19		

ALL EPHEMEROPTERA					255
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	1	0		

HYDROPSYCHE	1	0	1		

LEPTOCERIDAE					
OECETIS	1	0	0		

POLYCENTROPODIDAE					
PHYLOCENTROPUS	4	0	3		

ALL TRICHOPTERA					83
ACARINA	2	4	0		41
GASTROPODA					
AMNICOLA	12	27	23		

ELIMIA LIVESCENS	0	3	2		

FERISSIA	0	3	0		

GYRAULUS	3	1	3		

PHYSA	4	5	1		

PLEUROCERA ACUTA	0	3	0		

ALL GASTROPODA					620

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/ 9/84
TRANSECT 17 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	75	51	27	1054

UNIONIDAE	0	1	0	
ALL PELECYPODA				1061

B-630

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER		TRANSECT 17 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	11	5	19		241

ALL CNIDARIA					241
TRICLADIDA	0	2	5		48
NEWERTINEA	15	3	29		324
NEMATODA	41	12	20		503
OLIGOCHAETA					
SPIROSPERMA	4	8	21		

STYLARIA	0	1	0		

OTHER	10	19	7		482
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	397	477	234		7630

ALL POLYCHAETA					7630
CLADOCERA					
BOSMINA	2	1	2		

DAPHNIA	1	0	0		

ALL CLADOCERA					41
COPEPODA					
HARPACTICOIDA	1	0	0		7

ALL COPEPODA					7

B-631

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/ 9/84

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
OSTRACODA	0	1	0	7
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	10	1	6	117
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	12	8	17	

ALL EPHEMEROPTERA				262
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	374	158	444	

HYDROPSYCHE	26	10	9	

LEPTOCERIDAE				
GERACLEA	0	0	1	

ALL TRICHOPTERA				7038
ACARINA	2	0	1	21
GASTROPODA				
AMNICOLA	28	21	19	

ELIMIA LIVESCENS	32	2	20	

PHYSA	0	1	0	

PLEUROCERA ACUTA	1	0	2	

VALVATA SINCERA	0	1	0	

ALL GASTROPODA				881

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 17 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
PELECYPODA					
SPHAERIIDAE	25	9	25		
PISIDIUM					

SPHAERIUM	7	2	4		

ALL SPHAERIIDAE				486	
UNIONIDAE					
LAMP SILTS	0	0	1		

OTHER	2	0	1		
ALL PELECYPODA				523	

B-63'

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
DETROIT RIVER	TRANSECT 17 STATION 3	GRAB COUNTS			ESTIMATED
TAXON		1	2	3	NO./SQ. METER
CNIDARIA					
CORDYLOPHORA LACUSTRIS		0	1	0	

HYDRA		0	11	0	

ALL CNIDARIA					83
RHABDOCELA		0	0	1	7
TRICLADIDA		0	10	0	69
NEMERTINEA		38	7	11	383
NEMATODA		41	41	21	709
OLIGOCHAETA					
NAIS		0	1	0	

SPIROSPERNA		16	23	37	

OTHER		84	27	83	1866
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		1027	238	220	10234

ALL POLYCHAETA					10234
CLADOCERA					
BOSMINA		0	1	0	

DAPHNIA		0	1	0	

ALL CLADOCERA					14

B-634

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/ 9/84

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
COPEPODA				
HARPACTICOIDA	0	0	4	28
ALL COPEPODA				28
TERRESTRIAL INSECT				
DIPTERA				
CHIRONOMIDAE	3	6	25	234
EPHEMEROPTERA				
CAENIDAE				
BRACHYCERCUS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	11	3	2	
HEPTAGENIIDAE				
STENONEMA	0	2	0	
ALL EPHEMEROPTERA				138
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEMATOPSYCHE	30	14	1	
HYDROPSYCHE	4	1	0	
LEPTOCERIDAE				
CERACLEA	0	1	0	
OECETIS	0	1	1	
POLYCENTROPODIDAE				
PHYCOCENTROPUS	0	0	1	
ALL TRICHOPTERA				372

B-635

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/ 9/84
TRANSECT 17 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
AMNICOLA	17	21	66		
ELIMIA LIVESCENS	0	1	5		
ALL GASTROPODA					758
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	4	6	52		
SPHAERIUM	2	1	2		
ALL SPHAERIIDAE					461
UNIONIDAE	0	0	2		
ALL PELECYPODA					475

B-676

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 18 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	24	60	40	854	
TRICLADIDA	85	86	198	2541	
NEMERTINEA	66	79	106	1729	
NEMATODA	20	120	35	1205	
HIRUDINEA					
GLOSSIPHONIIDAE					
GLOSSIPHONIA HETEROCLITA	0	1	1		
ALL HIRUDINEA				14	
OLIGOCHAETA					
NAIS	99	90	115		
SPIROSPERMA	268	437	317		
STYLARIA	182	24	601		
OTHER	1566	3229	1371		
ALL OLIGOCHAETA				57152	
CLADOCERA					
CAMPTOCERCUS	0	0	17		
SIDA CRYSTALLINA	0	8	0		
ALL CLADOCERA				172	

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 16 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
COPEPODA					
CYCLOPS BICUSPIDATUS	0	8	0		

HARPACTICOIDA	16	0	0		

ALL COPEPODA					165
DECAPODA					
ASTACIDAE	0	2	0		14

ALL DECAPODA					14
AMPHIPODA					
GAMMARUS	3	0	38		

HYALELLA AZTECA	0	2	1		

ALL AMPHIPODA					303
ISOPODA					
ASELLUS	0	1	0		7

ALL ISOPODA					7
DIPTERA					
CHIRONOMIDAE	28	42	12		572
TRICHOPTERA					
HYDROPTILIDAE	1	1	6		
HYDROPTILA					

POLYCENTROPODOIDAE					
POLYCENTROPUS	4	1	6		

ALL TRICHOPTERA					131
ODONATA					
COENAGRIONIDAE	1	0	4		34

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/84
TRANSECT 18 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
AMNICOLA	1	3	5	

FERISSIA	97	202	494	

GYRAULUS	48	9	31	

PHYSA	5	12	64	

VALVATA TRICARINATA	0	1	0	

ALL GASTROPODA				6694
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	28	20	365

ALL PELECYPODA				365

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 18 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	23	55	8	592	
TRICLADIDA	12	0	0	83	
NEMERTINEA	1	16	16	227	
NEMATODA	32	2	16	344	
OLIGOCHAETA					
NAIS	64	128	96		

SPIROSPERMA	6	54	85		

OTHER					
ALL OLIGOCHAETA	1718	6206	2963	77957	
CLADOCERA					
ILYOCRYPTUS	1	0	0	7	

ALL CLADOCERA				7	
AMPHIPODA					
GAMMARUS	1	0	1	14	

ALL AMPHIPODA				14	
DIPTERA					
CERATOPOGONIDAE	1	0	0		
CHIRONOMIDAE	24	1	34	406	
ALL DIPTERA				413	

B-640

MACROZOOSBENTHOS PONAR GRAB COUNT DATA				10/11/84
TRANSECT 18 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
ODONATA				
GOMPHIDAE				
GOMPHUS	1	0	0	7

ALL ODONATA				7
GASTROPODA				
FERISSIA	1	1	0	

GYRAULUS	1	16	0	

PHYSA	1	0	0	

ALL GASTROPODA				138
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	14

ALL PELECYPODA				14

B-641

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 18 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	30	56	38	854	
TRICLADIDA	0	3	0	21	
NEMERTINEA	48	18	178	1680	
NEMATODA	0	0	16	110	
OLIGOCHAETA					
NAIS	0	0	16		

SPIROSPERMA	112	36	48		

OTHER					
ALL OLIGOCHAETA	2128	2517	3547	57882	
CLADOCERA					
SIDA CRYSTALLINA	0	0	16	110	

ALL CLADOCERA				110	
OSTRACODA	0	1	0	7	
DIPTERA					
CHIRONOMIDAE	0	0	4	28	

B-642

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 19 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	34	37	35	730	
TRICLADIDA	25	2	12	269	
NEMERTINEA	110	43	102	1756	
NEMATODA	82	129	123	2300	
OLIGOCHAETA					
NAIS	5	4	4		
SPIROSPERMA	95	47	77		
STYLARIA	13	38	30		
OTHER	168	58	123		
ALL OLIGOCHAETA				4559	
POLYCHAETA					
MANAYUNKIA SPECIOSA	202	334	402		6460
ALL POLYCHAETA					6460

B-643

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/11/84

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CLADOCERA				
BOSMINA	0	4	2	

CAMPTOCERCUS	0	0	1	

EURYCERCUS LAMELLATUS	0	1	0	

HOLOPEDIIUM	0	2	0	

SIDA CRYSTALLINA	1	1	1	

ALL CLADOCERA				80
COPEPODA				
CYCLOPS BICUSPIDATUS	0	2	0	

HARPACTICOIDA	5	6	11	

ALL COPEPODA				165
AMPHIPODA				
GAMMARUS	1	1	4	41

ALL AMPHIPODA				41
TERRESTRIAL INSECT	0	2	0	14
DIPTERA				
CERATOPOGONIDAE	0	5	0	
CHIRONOMIDAE	10	0	6	110
EMPHIDIDAE	0	1	0	
ALL DIPTERA				152

B-644

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 19 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
TRICHOPTERA					
HYDROPTILIDAE					
HYDROPTILA	5	3	1		

ORTHOTRICHIA	0	1	0		

POLYCENTROPODIDAE					
POLYCENTROPUS	0	0	1		

ALL TRICHOPTERA				76	
ACARINA	19	1	17	255	
GASTROPODA					
ANNICOLA	29	3	13		

ELIMIA LIVESCENS	7	2	4		

FERISSIA	1	0	0		

GYRAULUS	0	4	4		

PHYSA	2	0	8		

ALL GASTROPODA				530	
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	47	64	47	1088	

ALL PELECYPODA				1088	

B-645

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 19 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	0	0	1	7	
NEMERTINEA	108	233	145	3347	
NEMATODA	22	78	105	1412	
OLIGOCHAETA					
NATS	0	0	1		
SPIROSPERMA	27	16	29		
STYLARIA	0	0	1		
OTHER					
ALL OLIGOCHAETA	55	18	38	1274	
POLYCHAETA					
MANAYUNKIA SPECIOSA	4	1	6	76	
ALL POLYCHAETA				76	
CLADOCERA					
BOSMINA	0	3	0	21	
ALL CLADOCERA				21	
COPEPODA					
DIAPTOMUS	0	0	1		
HARPACTICOIDA	1	0	0		
ALL COPEPODA				14	
DIPTERA					
CHIRONOMIDAE	0	0	1	7	

B-646

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 19 STATION 2 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
ACARINA	0	0	1	7	
GASTROPODA					
AMNICOLA	1	1	2		
ELIMIA LIVESCENS	3	4	3		
FERISSIA	0	1	0		
ALL GASTROPODA					103

B 647

10/11/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

DETROIT RIVER TRANSECT 19 STATION 3

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
NEMERTINEA	38	108	132	1921
NEMATODA	4	4	3	76
BRYOZOA	0	+	0	+
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	25	17	10	
STYLARIA	1	0	0	
OTHER	10	3	2	
ALL OLIGOCHAETA				475
POLYCHAETA				
MANAYUNKIA SPECIOSA	14	3	7	165
ALL POLYCHAETA				165
CLADOCERA				
BOSMINA	0	1	1	
EURYCERCUS LAMELLATUS	0	1	0	
ALL CLADOCERA				21
COPEPODA				
HARPACTICOIDA	0	1	0	7
ALL COPEPODA				7
TERRESTRIAL INSECT	0	1	0	7

B-648

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 19 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CHIRONOMIDAE	1	0	0		7
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	2	0	0		

ALL EPHEMEROPTERA					14
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	1	0	0		

HYDROPSYCHE	3	0	1		

POLYCENTROPODIDAE					
NEURECLIPSIS	0	0	1		

ALL TRICHOPTERA					41
ACARINA	0	2	4		41
GASTROPODA					
ANNICOLA	1	2	0		

ELIMIA LIVESCENS	2	1	6		

PHYSA	0	2	0		

ALL GASTROPODA					96

B-649

10/11/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

DETROIT RIVER TRANSECT 20 STATION 1

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
RHABDOCOELA	37	126	53	1488
TRICLADIDA	16	43	19	537
NEMERTINEA	5	9	3	117
NEMATODA	32	167	38	1632
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA TRISERIALIS	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	108	182	109	

SPIROSPERMA	94	83	110	

STYLARIA	414	177	497	

OTHER	60	383	196	16686
ALL OLIGOCHAETA				
POLYCHAETA				
MANAYUNKIA SPECIOSA	18	88	38	992

ALL POLYCHAETA				992

B-650

MACROZOOBENTHOS PINAR GRAB COUNT DATA

10/11/84

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
CLADOCERA				
BOSMINA	0	6	0	
CAMPTOCERCUS	4	0	1	
EURYCERCUS LAMELLATUS	0	2	2	
HOLOPEDIDUM	0	1	0	
SIDA CRYSTALLINA	2	0	5	
ALL CLADOCERA				158
COPEPODA				
CYCLOPS VERNALIS	0	1	2	
DIAPTOMUS	0	4	0	
EUCYCLOPS	2	1	0	
EURYTEMORA	1	0	1	
HARPACTICOIDA	0	4	0	
MACROCYCLOPS	0	4	0	
ALL COPEPODA				138
AMPHIPODA				
GAMMARUS	36	95	37	
HYALELLA AZTECA	28	15	7	
ALL AMPHIPODA				1501
ISOPODA				
ASELLUS	3	11	4	
ALL ISOPODA				124

B-651

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 20 STATION 1 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
DIPTERA					
CERATOPOGONIDAE	0	0	1		
CHIRONOMIDAE	75	150	108		2293
EMPIDIDAE	0	1	0		
ALL DIPTERA					2307
EPHEMEROPTERA					
CAENIDAE					
CAENIS	4	24	23		
EPHEMERIDAE					
HEXAGENIA	0	0	1		
AMETROPIDAE					
TRICHOPTERIDAE	0	1	1		
ALL EPHEMEROPTERA					372
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEMATOPSYCHE	2	7	1		
HYDROPSYCHE	1	1	0		
HYDROPTILIDAE					
HYDROPTILA	1	1	0		
ORTHOTRICHIA	0	2	1		
POLYCENTROPODIDAE					
NEURECLIPSIS	77	63	12		
POLYCENTROPUS	0	0	1		
ALL TRICHOPTERA					1171
ACARINA	32	51	54		943

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/84
TRANSECT 20 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
ANNICOLA	34	49	38	

ELIMIA LIVESCENS	0	2	1	

FERISSIA	43	45	46	

GYRAULUS	9	17	22	

PHYSA	6	17	18	

ALL GASTROPODA				2390
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	38	52	136	

SPHAERIUM	1	0	0	

ALL SPHAERIIDAE				1563
ALL PELECYPODA				1563

B- 653

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 20 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	

NEMERTINEA	39	31	28	675	
NEMATODA	59	84	91	1611	
OLIGOCHAETA					
NAIS	0	1	1		

OTHER	6	9	8		
ALL OLIGOCHAETA				172	
CLADOCERA					
BOSMINA	0	0	1	7	

ALL CLADOCERA				7	
AMPHIPODA					
GAMMARUS	4	0	0	28	

ALL AMPHIPODA				28	
DIPTERA					
CHIRONOMIDAE	2	0	1	21	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	0	1		

BAETISCIDAE					
BAETISCA	1	0	0		

AMETROPIDAE					
TRICHOPTHOODES	0	1	0		

ALL EPHEMEROPTERA				21	

B-654

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/11/84

TRANSECT 20 STATION 2 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE				

HYDROPSYCHE	2	3	0	

POLYCENTROPODIDAE	4	6	2	
NEURECLIPSIS				

POLYCENTROPODIDAE	0	0	1	
NEURECLIPSIS				

ALL TRICHOPTERA				124
ACARINA				

GASTROPODA	0	0	2	14
ELIMIA LIVESCENS				

PHYSA	20	16	17	

ALL GASTROPODA	1	1	0	

ALL GASTROPODA				378
PELECYPODA				
SPHAERIIDAE				
PISIDIUM				

ALL PELECYPODA	1	0	0	7

ALL PELECYPODA				7

B-655

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 20 STATION 3			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
CNIDARIA					
HYDRA	0	1	0	7	7

ALL CNIDARIA				7	7
RHABDOCOELA	0	1	0	7	7
TRICLADIDA	1	2	1	28	28
NEMERTINEA	89	71	25	1274	1274
NEMATODA	106	37	42	1274	1274
OLIGOCHAETA					
SPIROSPERMA	3	2	0		

OTHER	2	2	1	69	69
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	3	0	1	28	28

ALL POLYCHAETA				28	28
CLADOCERA					
BOSMINA	1	0	0		

ILYOCRYPTUS	0	0	1		

ALL CLADOCERA				14	14

B-656

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/11/84

TRANSECT 20 STATION 3 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
AMPHIPODA				
GAMMARUS	4	2	1	48

ALL AMPHIPODA				48
TERRESTRIAL INSECT				
DIPTERA	0	1	0	7
CHIRONOMIDAE	2	0	0	14
EPHEMEROPTERA				
CAENIDAE	1	0	0	
CAENIS				

BAETISCIDAE	2	1	2	
BAETISCA				

ANETROPIDAE	0	1	0	
TRICHOPTERIDAE				
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE	76	3	12	
CHEMATOPSYCHE	68	21	5	

HYDROPSYCHE	1	0	0	

MACROSTEMUM	1	0	0	
POTAMYIA				

LEPTOCERIDAE	0	2	1	
CERACLEA				

POLYCENTROPODIDAE	2	0	0	
NEURECLIPSIS				

ALL TRICHOPTERA				1322
ACARINA	0	3	1	28

B-657

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 20 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
GASTROPODA					
ANNICOLA	1	0	0		
ELIMIA LIVESCENS	12	17	3		
FERISSIA	1	0	0		
PHYSA	2	0	0		
ALL GASTROPODA					248
PELECYPODA					
SPHAERIIDAE	0	0	1		7
PISIDIUM					
ALL PELECYPODA					7

B- 658

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 21 STATION 1			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	44	28	86	1088	
TRICLADIDA	7	9	14	207	
NEMERTINEA	31	46	62	887	
NEMATODA	173	107	189	3230	
HIRUDINEA					
GLOSSIPHONIIDAE					
BATRACHODELLA PHALERA	1	0	0		
ALL HIRUDINEA					7
OLIGOCHAETA					
NAIS	24	15	34		
SPIROSPERMA	72	252	90		
STYLARIA	43	40	46		
OTHER	136	217	143		
ALL OLIGOCHAETA					7658
POLYCHAETA					
MANAYUNKIA SPECIOSA	261	1386	311		13484
ALL POLYCHAETA					13484

B-6 59

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/11/84

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
CLADOCERA				
BOSMINA	0	0	4	
CAMPTOCERCUS	4	0	0	
SIDA CRYSTALLINA	20	10	12	
ALL CLADOCERA				344
COPEPODA				
MACROCYCLOPS	37	19	60	798
ALL COPEPODA				798
AMPHIPODA				
GAMMARUS	6	1	10	117
ALL AMPHIPODA				117
DIPTERA				
CHIRONOMIDAE	17	67	48	916
TRICHOPTERA				
HYDROPSYCHIDAE	1	0	0	
HYDROPSYCHE	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	4	0	4	
POLYCENTROPUS				
ALL TRICHOPTERA				69
ACARINA	10	3	3	110

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/84
TRANSECT 21 STATION 1 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED
	1	2	3	NO./SQ. METER
GASTROPODA				
ANNICOLA	22	17	21	

FERISSIA	2	14	1	

GYRAULUS	5	1	0	

PHYSA	4	5	1	

PLEUROCERA ACUTA	1	1	0	

ALL GASTROPODA				654
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	31	106	30	1150

ALL PELECYPODA				1150

B-661

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 21 STATION 2			
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
RHABDOCOELA	12	2	7	145	
NEMERTINEA	9	360	23	2700	
NEMATODA	2	6	8	110	
OLIGOCHAETA					
SPIROSPERMA	19	9	61		

OTHER	495	147	342	7389	
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA	0	20	0	138	

ALL POLYCHAETA				138	
COPEPODA					
HARPACTICOIDA	0	10	0	69	

ALL COPEPODA				69	
AMPHIPODA					
GAMMARUS	1	0	1	14	

ALL AMPHIPODA				14	
DIPTERA					
CHIRONOMIDAE	6	0	1	48	
EPHEMEROPTERA					
BAETISCIDAE					
BAETISCA	0	1	0		

ALL EPHEMEROPTERA				7	

MACROZOOBENTHOS PONAR GRAB COUNT DATA				10/11/84
TRANSECT 21 STATION 2 (CONT'D)				
TAXON	GRAB COUNTS			ESTIMATED NO./SQ. METER
	1	2	3	
PELECYPODA				
SPHAERIIDAE	0	39	33	496
PISIDIUM				

ALL PELECYPODA				496

B-663

MACROZOOBENTHOS PONAR GRAB COUNT DATA					10/11/84
DETROIT RIVER		TRANSECT 21 STATION 3			
TAXON		GRAB COUNTS			ESTIMATED
		1	2	3	NO./SQ. METER
RHABDOCOELA		0	0	5	34
NEMERTINEA		3	114	12	888
NEMATODA		5	43	4	358
OLIGOCHAETA					
SPIROSPERMA		0	53	8	

OTHER		0	63	230	2438
ALL OLIGOCHAETA					
POLYCHAETA					
MANAYUNKIA SPECIOSA		0	11	12	158

ALL POLYCHAETA					158
COPEPODA					
DIAPTOMUS		0	1	0	

HARPACTICOIDA		0	6	0	

ALL COPEPODA					48
AMPHIPODA					
GAMMARUS		0	1	0	7

ALL AMPHIPODA					7
DIPTERA					
CHIRONOMIDAE		0	0	2	14

B-664

MACROZOBENTHOS PONAR GRAB COUNT DATA					10/11/84
TRANSECT 21 STATION 3 (CONT'D)					
TAXON	GRAB COUNTS			ESTIMATED	
	1	2	3	NO./SQ. METER	
EPHEMEROPTERA					
CAENIDAE					
CAENIS	0	1	0		

ALL EPHEMEROPTERA					7
TRICHOPTERA					
HYDROPSYCHIDAE					
HYDROPSYCHE	9	0	0		

POLYCENTROPODIDAE					
NEURECLIPSIS	1	0	0		

ALL TRICHOPTERA					69
GASTROPODA					
AMNICOLA	1	0	0		

ELIMIA LIVESCENS	1	5	0		

ALL GASTROPODA					48
PELECYPODA					
SPHAERIIDAE					
PISIDIUM	0	3	21		165

ALL PELECYPODA					165

B-665

APPENDIX C

Density and Percent Frequency of Occurrence of Macrozoobenthos: A Summary by Taxon, Year, and Location

Density (No./m²) and percent frequency of occurrence (PCT) of macrozoobenthos taxa from five locations in the SCDRS in May and October 1983 and 1984. The upper St. Clair River location includes transects I - V; the lower St. Clair River, VI - X; Lake St. Clair, XI - XIII; upper Detroit River, XIV - XVII; and lower Detroit River, XVIII - XXI. The number of samples collected per year at each location is given as n, and a dot (.) indicates zero occurrence.

Appendix C

Table 1. Density and percent frequency of occurrence of macrozoobenthos taxa from five locations in the SCORS in May and October, 1983 and 1984.

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
<u>Ichthyomyzon fossor</u>	1984	0.92	10.0	.	.	.	.	.	.	.	.
<u>Etheostoma nigrum</u>	1983	.	.	.	.	.	.	.	.	0.29	4.2
	1984	.	.	.	.	.	.	.	.	0.29	4.2
<u>Etheostoma caeruleum</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
<u>Cottus bairdii</u>	1983	0.46	6.7	0.23	3.3	.	.	.	.	.	.
Fish remains	1984	0.23	3.3	.	.	.	.	.	.	.	.
Fish eggs	1983	46.14	26.7	8.03	16.7	.	.	.	.	.	.
	1984	2.30	20.0	.	.	.	.	2.58	20.8	.	.
<u>Spongilla</u>	1983	0.23	3.3	.	.	2.30	16.7	.	.	.	.
	1984	0.23	3.3	1.38	13.3	.	.	3.16	16.7	.	.
<u>Cordylophora lacustris</u>	1984	.	.	.	.	.	.	0.29	4.2	.	.
<u>Hydra</u>	1983	3624.91	86.7	8429.05	93.3	55.86	33.3	2524.82	95.8	885.51	66.7
	1984	30490.49	86.7	21466.89	63.3	6.12	22.2	574.75	83.3	37.88	37.5
<u>Rhabdocoela</u>	1983	158.85	70.0	603.96	96.7	29.46	77.8	154.38	83.3	419.80	87.5
	1984	71.85	43.3	122.35	70.0	33.29	94.4	70.30	58.3	306.17	79.2
<u>Tricladida</u>	1983	17.68	16.7	127.40	66.7	1.91	22.2	56.53	33.3	161.55	45.8
	1984	28.24	50.0	56.24	43.3	4.97	50.0	45.05	70.8	170.73	62.5
<u>Nemertinea</u>	1983	69.56	66.7	80.57	80.0	1.91	16.7	276.61	91.7	641.89	95.8
	1984	233.69	53.3	28.69	36.7	0.77	5.6	237.02	83.3	808.04	91.7
<u>Trematoda</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
<u>Nematoda</u>	1983	532.80	86.7	1010.96	100.0	1293.93	100.0	1354.95	100.0	834.43	95.8
	1984	287.86	80.0	525.22	100.0	1164.61	100.0	1205.74	100.0	1241.90	100.0
<u>Bryozoa</u>	1984	0.23	3.3	0.23	3.3	.	.	1.15	8.3	0.29	4.2
<u>Hirudinea</u>	1983	0.46	6.7	.	.	.	.	.	.	.	.
<u>Erpobdellidae</u>	1983	1.38	13.3	1.15	6.7	.	.	8.03	20.8	0.29	4.2
	1984	2.98	23.3	0.69	3.3	.	.	5.16	25.0	.	.
<u>Erpobdella punctata</u>	1983	0.46	3.3	.	.	.	.	1.15	4.2	.	.
	1984	0.46	3.3	.	.	.	.	.	.	.	.
<u>Glossiphoniidae</u>	1983	.	.	.	.	.	.	0.86	12.5	.	.
<u>Glossiphonia complanata</u>	1983	.	.	0.92	10.0	.	.	.	.	.	.
	1984	.	.	0.23	3.3	0.38	5.6	.	.	.	.
<u>Glossiphonia heteroclita</u>	1983	.	.	1.15	6.7	.	.	1.43	8.3	.	.
	1984	.	.	0.23	3.3	.	.	1.15	12.5	0.57	4.2
<u>Helobdella stagnalis</u>	1983	0.46	6.7	2.07	6.7	4.59	44.4	1.43	12.5	.	.
	1984	.	.	0.46	3.3	1.53	16.7	1.43	8.3	.	.
<u>Helobdella elongata</u>	1983	0.46	3.3	0.46	3.3	7.65	38.9	1.72	12.5	.	.
	1984	.	.	1.84	13.3	6.12	27.8	3.16	16.7	.	.
<u>Helobdella triseriata</u>	1983	0.23	3.3	0.23	3.3	.	.	2.30	8.3	.	.
	1984	.	.	.	.	.	.	.	.	0.29	4.2

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
<u>Helobdella</u> <u>papillata</u>	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
<u>Actinobdella</u> <u>inequianulata</u>	1984	0.23	3.3	.	.	.	.	0.29	4.2	.	.
<u>Placobdella</u> <u>montifera</u>	1983	.	.	.	.	0.77	11.1	.	.	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
<u>Placobdella</u> <u>papillifera</u>	1984	0.23	3.3	.	.	.	.	.	.	.	.
<u>Batrachobdella</u> <u>phalera</u>	1983	.	.	.	.	.	.	.	.	0.29	4.2
	1984	.	.	0.23	3.3	.	.	.	.	0.29	4.2
<u>Piscicolidae</u>	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
	1984	0.92	3.3	0.23	3.3	0.38	5.6	.	.	.	.
<u>Piscicola</u>	1983	0.92	10.0	0.23	3.3	.	.	0.29	4.2	.	.
	1984	0.69	6.7	0.92	10.0	.	.	.	.	.	.
<u>Piscicola</u> <u>milneri</u>	1983	.	.	0.46	6.7	.	.	.	.	.	.
	1984	0.46	3.3	0.46	3.3	.	.	.	.	.	.
<u>Oligochaeta</u>	1983	3291.83	90.0	5975.79	100.0	3627.36	100.0	3048.21	100.0	25742.36	100.0
	1984	3927.47	80.0	4064.05	100.0	3979.73	100.0	3090.68	100.0	18195.15	100.0
<u>Nais</u>	1983	276.16	56.7	114.09	66.7	5.36	22.2	7.46	29.2	70.59	41.7
	1984	837.42	43.3	181.35	43.3	.	.	16.93	25.0	426.40	58.3
<u>Stylaria</u>	1983	69.56	23.3	399.66	40.0	0.77	5.6	101.58	29.2	269.15	29.2
	1984	986.63	36.7	987.32	43.3	0.38	5.6	92.97	25.0	605.74	37.5
<u>Branchiura</u>	1983	.	.	.	.	.	.	2.58	12.5	.	.
	1984	.	.	.	.	.	.	1.15	4.2	.	.
<u>Branchiura</u> <u>sowerbyi</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	.	.	0.57	4.2	.	.
<u>Spirosperma</u>	1983	273.40	56.7	1189.10	86.7	55.09	77.8	347.20	95.8	951.51	100.0
	1984	416.41	53.3	494.46	90.0	45.15	66.7	309.90	100.0	1038.74	95.8
<u>Spirosperma</u> <u>ferox</u>	1983	.	.	44.07	3.3	.	.	.	.	.	.
<u>Manayunkia</u> <u>speciosa</u>	1983	8.49	46.7	1101.18	63.3	661.12	100.0	3635.87	95.8	2484.08	91.7
	1984	0.69	10.0	1117.25	50.0	957.63	100.0	1193.98	83.3	1106.46	70.8
<u>Eurycercus</u> <u>lamellatus</u>	1983	.	.	0.23	3.3	.	.	.	.	0.29	4.2
	1984	3.90	6.7	0.69	6.7	6.12	16.7	1.15	4.2	1.72	12.5
<u>Camptocercus</u>	1983	.	.	.	.	.	.	.	.	4.59	4.2
	1984	0.23	3.3	.	.	.	.	.	.	7.75	16.7
<u>Chydorus</u>	1983	0.23	3.3	.	.	0.38	5.6	.	.	.	.
<u>Alona</u>	1983	.	.	7.35	3.3	.	.	5.45	16.7	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
<u>Sida</u> <u>crystallina</u>	1983	1.38	10.0	2.75	16.7	0.38	5.6	0.86	8.3	1.15	8.3
	1984	0.23	3.3	.	.	.	.	26.11	16.7	21.81	20.8
<u>Diaphanosoma</u>	1983	0.23	3.3	.	.	.	.	0.29	4.2	.	.
<u>Holopedium</u>	1983	1.15	16.7	.	.	.	.	.	.	.	.
	1984	76.21	50.0	160.46	50.0	77.67	50.0	.	.	0.86	8.3

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
<u>Leptodora</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
<u>kindtii</u>	1984	0.23	3.3	.	.	.	.	.	.	.	.
<u>Daphnia</u>	1983	177.45	90.0	48.44	70.0	6.89	55.6	20.09	45.8	7.46	37.5
	1984	259.40	53.3	108.58	70.0	82.26	55.6	3.73	20.8	0.57	8.3
<u>Daphnia pulex</u>	1983	1.61	10.0	2.07	13.3	.	.	.	.	.	.
<u>Daphnia galeata mendotae</u>	1983	6.89	3.3	0.46	6.7	.	.	.	.	.	.
<u>Daphnia ambigua</u>	1983	.	.	0.46	6.7	.	.	.	.	.	.
<u>Daphnia pulicaria</u>	1983	.	.	0.92	10.0	.	.	.	.	.	.
<u>Bosmina</u>	1983	4.59	36.7	1.84	23.3	1.53	22.2	2.30	20.8	0.57	8.3
	1984	148.06	46.7	97.10	50.0	1.53	5.6	3.73	25.0	6.60	29.2
<u>Ilyocryptus</u>	1983	7.35	13.3	51.88	40.0	62.75	38.9	2.01	12.5	13.49	20.8
	1984	0.46	6.7	1.61	6.7	4.21	11.1	0.57	4.2	0.57	8.3
<u>Polyphemus pediculus</u>	1984	.	.	.	.	0.38	5.6	.	.	.	.
<u>Limnocalanus</u>	1983	12.86	56.7	14.92	50.0	11.10	50.0	14.06	41.7	21.52	50.0
	1984	10.79	40.0	41.09	50.0	19.51	44.4	12.34	41.7	25.54	45.8
<u>Epischura lacustris</u>	1983	27.09	43.3	0.92	13.3	2.68	22.2	0.29	4.2	2.58	8.3
	1984	28.69	26.7	11.02	36.7	0.77	11.1	0.29	4.2	.	.
<u>Eurytemora</u>	1983	.	.	.	.	.	.	.	.	4.59	4.2
	1984	.	.	0.23	3.3	.	.	.	.	0.57	4.2
<u>Diaptomus</u>	1983	86.31	86.7	107.20	66.7	12.63	66.7	35.58	66.7	57.10	70.8
	1984	208.44	96.7	119.37	90.0	21.04	44.4	92.68	62.5	63.13	54.2
<u>Cyclopoidae</u>	1983	3.21	30.0	2.98	16.7	4.21	27.8	1.72	4.2	2.30	16.7
<u>Cyclops bicuspidatus</u>	1983	8.26	36.7	22.50	30.0	3.06	22.2	28.41	45.8	22.96	41.7
	1984	37.42	66.7	9.41	46.7	6.89	22.2	21.23	33.3	24.10	50.0
<u>Cyclops vernalis</u>	1983	0.23	3.3	.	.	0.38	5.6	0.57	4.2	.	.
	1984	.	.	.	.	1.53	16.7	0.86	4.2	3.16	12.5
<u>Mesocyclops</u>	1983	0.23	3.3	0.23	3.3	2.30	22.2	0.86	12.5	.	.
	1984	2.53	13.3	0.46	6.7	0.38	5.6	9.47	8.3	.	.
<u>Macrocyclus</u>	1983	0.92	10.0	2.98	20.0	21.81	66.7	5.45	16.7	13.20	12.5
	1984	.	.	4.13	6.7	27.16	44.4	0.86	12.5	34.43	8.3
<u>Eucyclops</u>	1984	.	.	.	.	.	.	1.15	4.2	0.86	4.2
<u>Paracyclops</u>	1983	2.53	10.0	3.44	23.3	.	.	1.15	8.3	0.29	4.2
	1984	.	.	6.20	6.7	.	.	4.59	4.2	.	.
<u>Harpacticoida</u>	1983	155.87	43.3	344.56	86.7	255.19	100.0	371.31	58.3	13.77	29.2
	1984	35.35	36.7	21.58	50.0	46.29	88.9	236.44	41.7	27.55	45.8
<u>Unidentified nauplii</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	.	.	0.23	3.3	.	.	0.29	4.2	.	.
<u>Astacidae</u>	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
	1984	.	.	.	.	.	.	.	.	0.57	4.2
<u>Orconectes</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	0.23	3.3	.	.	.	.	.	.	.	.

(CONTINUED)

Taxon or Item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Ostracoda	1983	59.00	50.0	92.51	63.3	84.55	100.0	272.31	66.7	6.60	20.8
	1984	60.60	40.0	67.26	43.3	148.06	100.0	1185.94	70.8	2.01	25.0
Gammaridae	1983	.	.	.	.	.	.	.	.	0.29	4.2
<u>Gammarus</u>	1983	374.18	76.7	1186.80	100.0	634.34	100.0	217.79	58.3	44.19	66.7
	1984	697.85	70.0	971.02	93.3	131.23	100.0	99.00	70.8	88.38	75.0
<u>Pontoporeia</u> <u>hoyi</u>	1983	20.66	33.3	11.71	40.0	.	.	0.29	4.2	0.29	4.2
	1984	4.59	6.7	0.23	3.3	.	.	.	.	.	.
<u>Hyalella azteca</u>	1983	31.91	73.3	320.00	76.7	.	.	83.21	33.3	30.42	37.5
	1984	46.14	43.3	91.82	63.3	1.53	16.7	151.79	41.7	23.82	25.0
<u>Asellus</u>	1983	1.15	13.3	130.85	56.7	.	.	6.60	16.7	0.86	4.2
	1984	0.69	10.0	26.63	30.0	0.38	5.6	16.93	20.8	5.45	8.3
<u>Lirceus</u>	1983	0.46	3.3	6.89	23.3	.	.	6.03	8.3	.	.
	1984	.	.	12.17	10.0	.	.	0.29	4.2	.	.
Terrestrial insect	1983	6.20	36.7	3.67	36.7	1.53	16.7	2.30	20.8	2.58	29.2
	1984	11.71	56.7	12.17	46.7	1.91	22.2	3.73	41.7	1.43	16.7
Chironomidae	1983	1814.41	100.0	5520.12	100.0	791.97	100.0	1466.57	95.8	184.22	91.7
	1984	1560.06	100.0	2085.51	100.0	667.62	100.0	1624.11	100.0	256.82	100.0
Ceratopogonidae	1983	1.84	13.3	44.07	73.3	0.38	5.6	37.59	45.8	42.75	29.2
	1984	2.53	16.7	56.70	63.3	1.53	22.2	45.34	50.0	13.77	20.8
Empididae	1983	21.35	53.3	6.66	30.0	.	.	0.29	4.2	1.43	12.5
	1984	18.59	56.7	4.13	33.3	.	.	0.57	8.3	1.43	20.8
Tipulidae	1983	.	.	0.23	3.3	.	.	.	.	0.29	4.2
<u>Chaoborus</u>	1983	.	.	.	.	.	.	.	.	0.57	8.3
	1984	.	.	.	.	.	.	0.29	4.2	.	.
Psychodidae	1983	0.23	3.3	0.23	3.3	.	.	.	.	1.15	12.5
	1984	5.74	10.0	.	.	.	.	.	.	3.44	8.3
<u>Trichorythodes</u>	1983	.	.	.	.	.	.	0.29	4.2	0.29	4.2
	1984	.	.	0.23	3.3	.	.	.	.	1.15	12.5
Ephemeroptera	1983	0.46	3.3	.	.	.	.	0.29	4.2	.	.
<u>Caenis</u>	1983	25.48	26.7	375.09	90.0	0.38	5.6	35.87	41.7	12.05	20.8
	1984	128.09	53.3	322.30	83.3	1.53	22.2	22.38	33.3	16.07	20.8
<u>Brachycercus</u>	1984	.	.	.	.	.	.	0.57	8.3	.	.
<u>Hexagenia</u>	1983	48.21	36.7	340.66	90.0	1288.57	100.0	66.28	58.3	6.03	41.7
	1984	309.90	53.3	999.48	76.7	1131.71	100.0	72.02	58.3	5.74	33.3
<u>Ephemereila</u>	1983	46.14	30.0	21.12	33.3	0.38	5.6	1.43	8.3	.	.
	1984	4.36	20.0	0.92	13.3	.	.	0.29	4.2	.	.
<u>Baetis</u>	1983	0.69	10.0	.	.	.	.	0.86	4.2	.	.
<u>Baetisca</u>	1983	0.92	13.3	0.69	10.0	0.38	5.6	32.42	54.2	5.45	33.3
	1984	6.66	13.3	11.02	20.0	.	.	32.42	54.2	6.31	29.2
<u>Stenonema</u>	1983	14.92	43.3	4.36	16.7	.	.	.	.	1.15	12.5
	1984	20.89	36.7	9.18	23.3	0.38	5.6	1.15	8.3	.	.
<u>Brychius</u>	1983	.	.	0.46	6.7	.	.	.	.	.	.

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
<u>Dubiraphia</u>	1983	2.30	16.7	2.75	20.0	.	.	.	.	.	.
	1984	14.00	23.3	0.23	3.3	.	.	.	.	.	.
<u>Lepidoptera</u>	1983	4.36	10.0	3.44	23.3	.	.	2.01	12.5	2.58	20.8
	1984	1.38	10.0	0.92	13.3	.	.	2.01	8.3	2.58	16.7
<u>Pyralidae</u>	1983	.	.	0.46	6.7	.	.	.	.	.	.
	1984	.	.	.	.	.	.	0.29	4.2	.	.
<u>Brachycentrus</u>	1983	7.12	30.0	30.07	33.3	.	.	0.29	4.2	.	.
	1984	7.58	20.0	16.76	33.3	.	.	.	.	.	.
<u>Micrasema</u>	1984	0.23	3.3	1.38	10.0	.	.	.	.	.	.
<u>Protoptila</u>	1983	8.03	16.7	.	.	.	.	.	.	.	.
	1984	26.40	13.3	.	.	.	.	1.15	8.3	.	.
<u>Polycentropodi-</u> <u>dae</u>	1983	0.23	3.3	0.69	3.3	.	.	.	.	.	.
<u>Phylocentropus</u>	1983	.	.	.	.	.	.	2.87	16.7	.	.
	1984	0.23	3.3	.	.	.	.	13.20	20.8	.	.
<u>Polycentropus</u>	1983	0.23	3.3	21.81	30.0	.	.	0.57	4.2	5.45	20.8
	1984	0.46	6.7	7.12	33.3	.	.	0.57	4.2	6.60	20.8
<u>Neureclipsis</u>	1983	9.41	20.0	25.94	33.3	.	.	1.15	8.3	15.21	20.8
	1984	19.05	23.3	15.84	26.7	.	.	.	.	47.63	41.7
<u>Trichoptera</u>	1984	0.23	3.3	.	.	.	.	0.29	4.2	.	.
<u>Leptoceridae</u>	1983	0.46	6.7	.	.	.	.	.	.	.	.
<u>Oecetis</u>	1983	22.73	40.0	43.16	60.0	46.68	83.3	13.49	25.0	5.74	20.8
	1984	2.30	20.0	35.81	63.3	35.58	94.4	15.49	41.7	.	.
<u>Triatodes</u>	1983	2.30	6.7	2.98	33.3	.	.	.	.	.	.
	1984	1.84	10.0	2.30	23.3	.	.	0.57	8.3	0.29	4.2
<u>Mystacides</u>	1983	3.67	26.7	13.31	40.0	0.38	5.6	0.29	4.2	.	.
	1984	5.51	23.3	4.36	16.7	.	.	.	.	.	.
<u>Setodes</u>	1983	0.46	6.7	3.44	20.0	.	.	0.57	4.2	.	.
	1984	0.46	6.7	4.59	26.7	.	.	0.29	4.2	.	.
<u>Ceraclea</u>	1983	4.59	36.7	10.33	43.3	.	.	2.01	20.8	0.86	8.3
	1984	4.59	30.0	15.38	40.0	.	.	4.02	29.2	0.86	4.2
<u>Nectopsyche</u>	1983	0.46	6.7	3.21	23.3	.	.	0.29	4.2	0.57	4.2
	1984	0.46	3.3	0.69	6.7	.	.	0.57	8.3	.	.
<u>Hydroptilidae</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	0.23	3.3	.	.	.	.	.	.	.	.
<u>Hydroptila</u>	1983	.	.	0.92	10.0	.	.	.	.	7.46	20.8
	1984	.	.	0.92	6.7	.	.	0.29	4.2	7.17	33.3
<u>Orthotrichia</u>	1983	.	.	0.23	3.3	.	.	.	.	.	.
	1984	.	.	0.23	3.3	.	.	0.29	4.2	2.01	16.7
<u>Phryganea</u>	1984	0.23	3.3	.	.	.	.	.	.	.	.
<u>Pycnopsyche</u>	1983	.	.	0.46	6.7	.	.	.	.	.	.
<u>Hydropsychidae</u>	1983	7.12	6.7	.	.	.	.	.	.	.	.

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
<u>Cheumatopsyche</u>	1983	94.81	60.0	22.50	26.7	5.36	11.1	471.45	66.7	28.12	37.5
	1984	130.39	63.3	20.66	36.7	.	.	927.69	83.3	41.61	50.0
<u>Hydropsyche</u>	1983	75.98	70.0	11.48	40.0	.	.	108.46	45.8	20.09	41.7
	1984	140.26	66.7	32.37	26.7	.	.	307.32	66.7	46.20	54.2
<u>Macrostemum</u>	1984	.	.	.	.	.	.	.	.	0.29	4.2
<u>Potamyia</u>	1984	.	.	.	.	.	.	.	.	0.29	4.2
<u>Corixidae</u>	1983	0.46	6.7	.	.	.	.	.	.	.	.
<u>Coenagrionidae</u>	1983	.	.	0.92	13.3	.	.	.	.	4.02	20.8
	1984	.	.	0.46	3.3	.	.	.	.	4.02	20.8
<u>Gomphus</u>	1983	0.92	10.0	.	.	.	.	.	.	.	.
	1984	1.38	13.3	0.46	6.7	.	.	.	.	0.29	4.2
<u>Stylurus notatus</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
<u>Plecoptera</u>	1983	1.15	10.0	.	.	.	.	.	.	.	.
	1984	1.15	13.3	.	.	.	.	.	.	.	.
<u>Perlodidae</u>	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
<u>Isogenoides</u>	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	1.15	10.0	.	.	.	.	.	.	.	.
<u>Acarina</u>	1983	70.93	73.3	19.51	80.0	17.60	100.0	28.98	83.3	43.33	66.7
	1984	64.51	73.3	26.63	73.3	5.74	66.7	24.10	66.7	96.99	70.8
<u>Tardigrada</u>	1983	1.38	6.7	0.46	6.7	.	.	0.29	4.2	4.88	4.2
	1984	.	.	.	.	.	.	.	.	6.89	8.3
<u>Gastropoda</u>	1983	0.23	3.3	.	.	.	.	0.29	4.2	.	.
<u>Ferrisia</u>	1983	3.90	20.0	.	.	.	.	3.44	12.5	66.28	54.2
	1984	55.55	16.7	.	.	.	.	2.30	12.5	298.14	62.5
<u>Lymnaea</u>	1983	8.26	30.0	.	.	.	.	2.01	4.2	.	.
	1984	3.67	23.3	0.23	3.3	.	.	.	.	.	.
<u>Physa</u>	1983	75.06	53.3	129.93	80.0	0.38	5.6	24.39	33.3	24.10	45.8
	1984	119.37	53.3	89.30	80.0	.	.	25.25	41.7	56.53	62.5
<u>Helisoma</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
<u>Gyraulus</u>	1983	67.95	40.0	166.89	73.3	26.40	50.0	36.73	33.3	5.74	29.2
	1984	14.23	26.7	80.57	66.7	29.46	50.0	66.57	37.5	49.35	33.3
<u>Amnicola</u>	1983	566.77	66.7	771.77	90.0	38.26	77.8	186.80	87.5	88.38	79.2
	1984	363.85	60.0	323.44	90.0	27.55	61.1	218.94	91.7	96.99	75.0
<u>Bithynia</u>	1983	.	.	.	.	0.77	11.1	0.57	8.3	0.29	4.2
	1984	.	.	.	.	.	.	0.86	8.3	.	.
<u>Somatogyrus subglobosus</u>	1983	.	.	0.23	3.3	.	.	.	.	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
<u>Pleurocera acuta</u>	1983	2.30	6.7	0.23	3.3	4.59	22.2	7.75	41.7	.	.
	1984	1.84	6.7	.	.	0.38	5.6	11.76	41.7	0.86	8.3
<u>Elimia livescens</u>	1983	197.42	60.0	145.31	90.0	5.36	33.3	150.07	79.2	79.77	62.5
	1984	236.67	53.3	104.45	63.3	9.56	61.1	191.10	79.2	51.08	79.2

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
<u>Valvata sincera</u>	1983	0.92	10.0	1.38	6.7	.	.	.	.	1.15	8.3
	1984	1.61	13.3	0.23	3.3	3.83	5.6	0.29	4.2	0.29	4.2
<u>Valvata tricarinata</u>	1983	138.88	16.7	20.89	50.0	11.10	38.9	33.86	12.5	0.57	8.3
	1984	147.37	33.3	3.21	20.0	6.89	44.4	.	.	0.29	4.2
<u>Campeloma</u>	1983	.	.	.	.	.	.	0.29	4.2	0.86	8.3
	1984	0.23	3.3	.	.	0.38	5.6	.	.	.	.
<u>Unionidae</u>	1983	.	.	0.69	10.0	1.15	16.7	5.45	37.5	.	.
	1984	0.46	6.7	1.15	13.3	0.77	11.1	7.17	50.0	.	.
<u>Anodonta grandis</u>	1984	.	.	0.38	5.6	.	.	.	.	.	.
<u>Lampsilis</u>	1984	.	.	0.23	3.3	0.38	5.6	1.15	12.5	.	.
<u>Lampsilis radiata</u>	1983	.	.	.	.	0.77	11.1	0.29	4.2	0.29	4.2
<u>stittiquidea</u>	1984	.	.	.	.	0.38	5.6	0.57	8.3	.	.
<u>Lampsilis ventricosa</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	.	.	0.29	4.2	.	.
<u>Leptodea fragilis</u>	1983	.	.	.	.	0.38	5.6	0.29	4.2	.	.
<u>Truncilla</u>	1984	.	.	.	.	.	.	0.29	4.2	.	.
<u>Truncilla donaciformis</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
<u>Truncilla truncata</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	.	.	0.86	4.2	.	.
<u>Proptera alata</u>	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
<u>Elliptio</u>	1983	.	.	.	.	.	.	0.86	12.5	.	.
<u>Elliptio dilatatus</u>	1984	.	.	.	.	.	.	0.29	4.2	.	.
<u>Pleurobema cordatum</u>	1983	.	.	.	.	.	.	0.57	8.3	.	.
<u>Ptychobranhus fasciolaria</u>	1984	.	.	.	.	.	.	0.29	4.2	.	.
<u>Pisidium</u>	1983	167.58	70.0	372.80	90.0	613.30	100.0	352.94	95.8	318.80	87.5
	1984	269.04	70.0	226.34	90.0	729.60	100.0	382.78	100.0	248.21	62.5
<u>Sphaerium</u>	1983	11.02	36.7	40.86	53.3	34.82	94.4	51.36	70.8	1.15	8.3
	1984	1.15	10.0	19.74	40.0	24.49	83.3	73.46	79.2	0.29	4.2

APPENDIX D

Density and Total Biomass of Macrozoobenthos - A Summary by Year, Month, Transect, and Station

The density (square root of no./m² + 0.5) of 24 macrozoobenthos taxa and total biomass (ash free dry weight in g/m²) are plotted in three different arrangements: transects by year for May, transect by year for October, and transect by station with months combined. These plots are part of the ANOVA results and should be used when interpreting main effect results in Tables 8 to 19 in the main body of the report.

Index

	<u>Figure</u>		<u>Figure</u>
<u>Hydra</u>	1-3	<u>Oecetis</u>	40-42
<u>Turbellaria</u>	4-6	<u>Caenis</u>	43-45
<u>Nemertinea</u>	7-9	<u>Hexagenia</u>	46-48
<u>Nematoda</u>	10-12	<u>Cheumatopsyche</u>	49-51
<u>Hirudinea</u>	13-15	<u>Hydropsyche</u>	52-54
<u>Oligochaeta</u>	16-18	<u>Acarina</u>	55-57
<u>Manayunkia</u>	19-21	<u>Sphaeriidae</u>	58-60
<u>Harpacticoida</u>	22-24	<u>Physa</u>	61-63
<u>Ostracoda</u>	25-27	<u>Gyraulus</u>	64-66
<u>Isopoda</u>	28-30	<u>Amnicola</u>	67-69
<u>Gammarus</u>	31-33	<u>Elmia</u>	70-72
<u>Hyalella</u>	34-36	<u>Macrozoobenthos Biomass</u>	73-75
<u>Chironomidae</u>	37-39		

FIG. 1

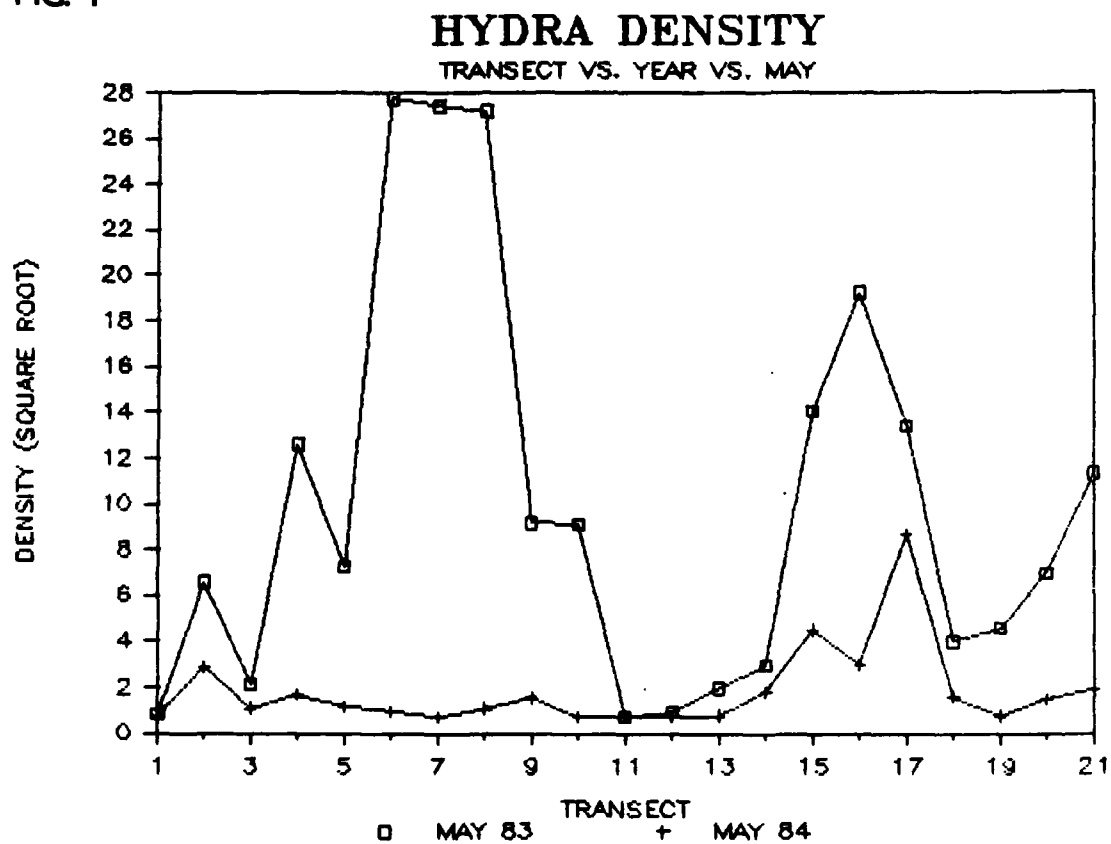


FIG. 2

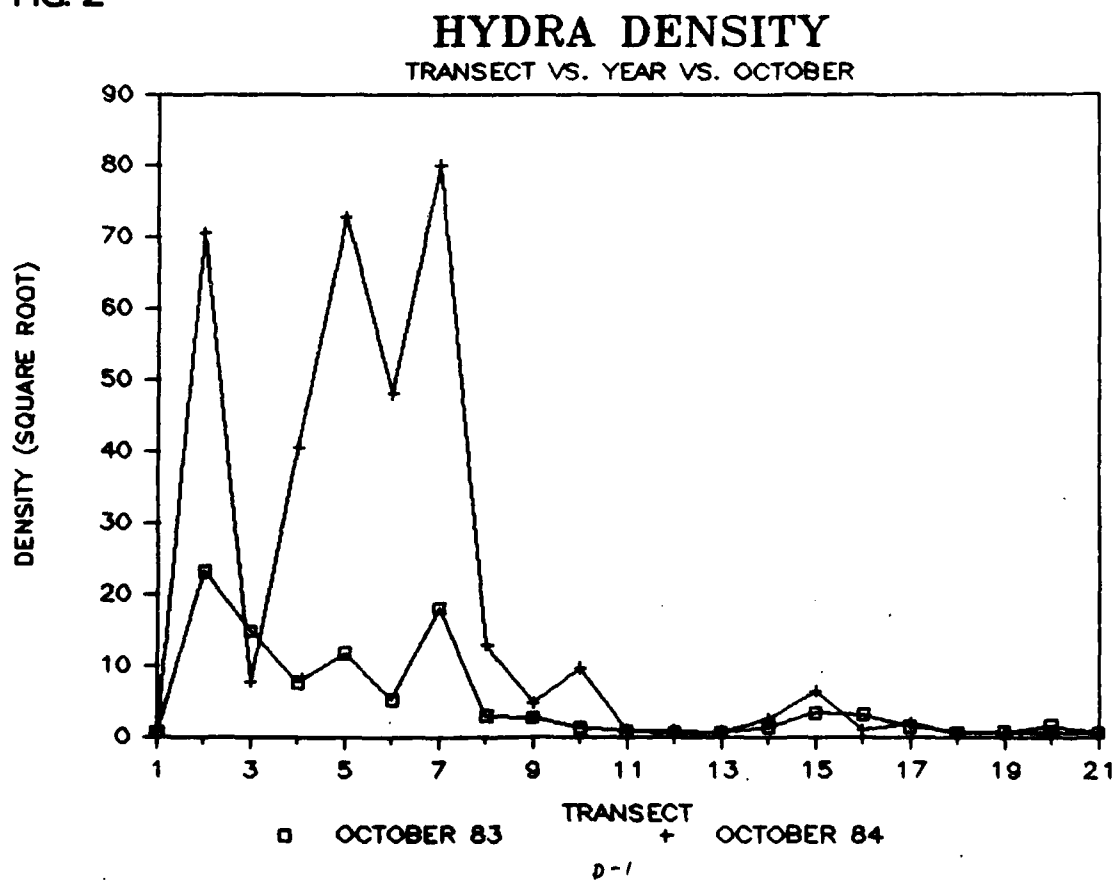


FIG. 3

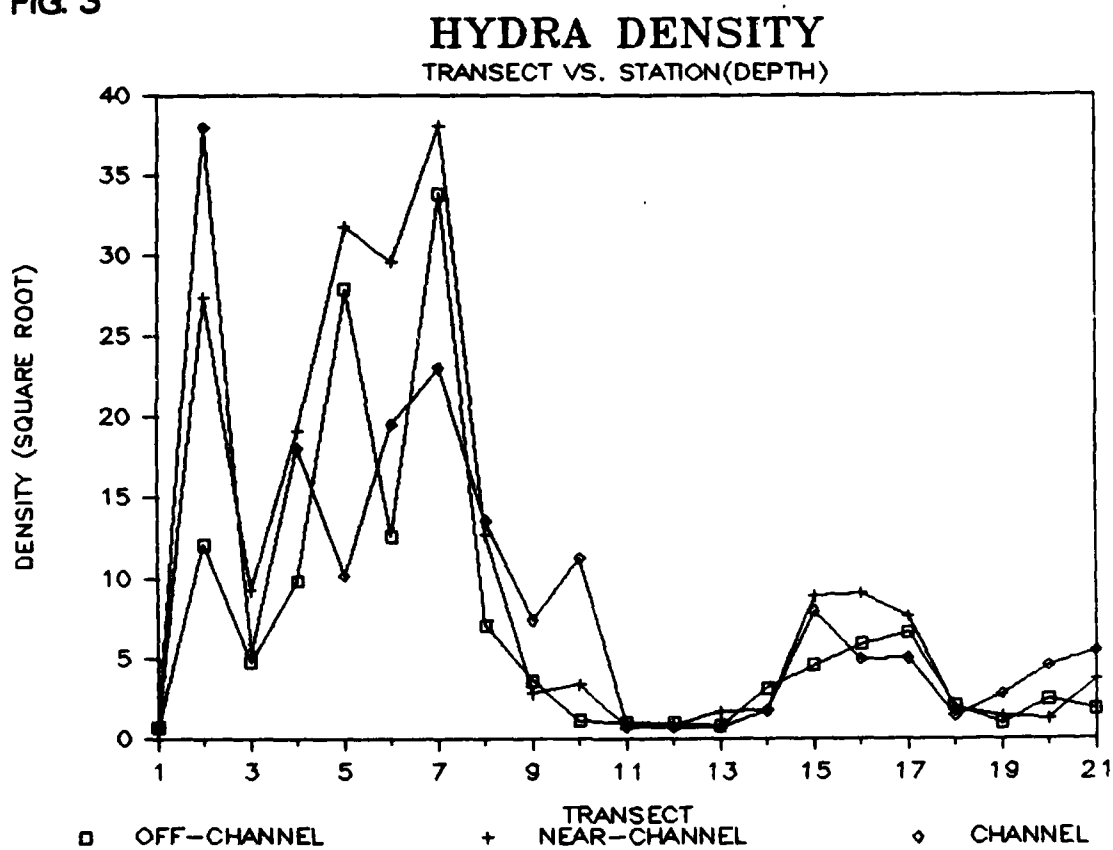


FIG. 4

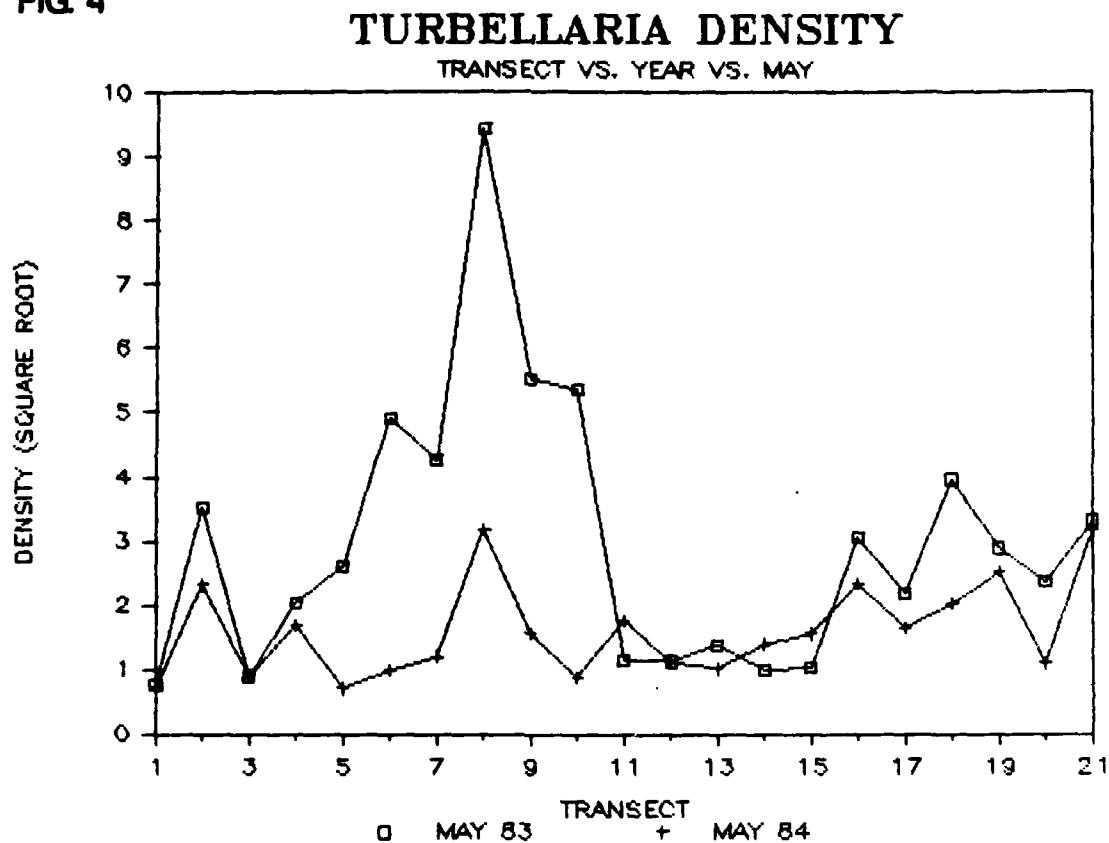


FIG. 5

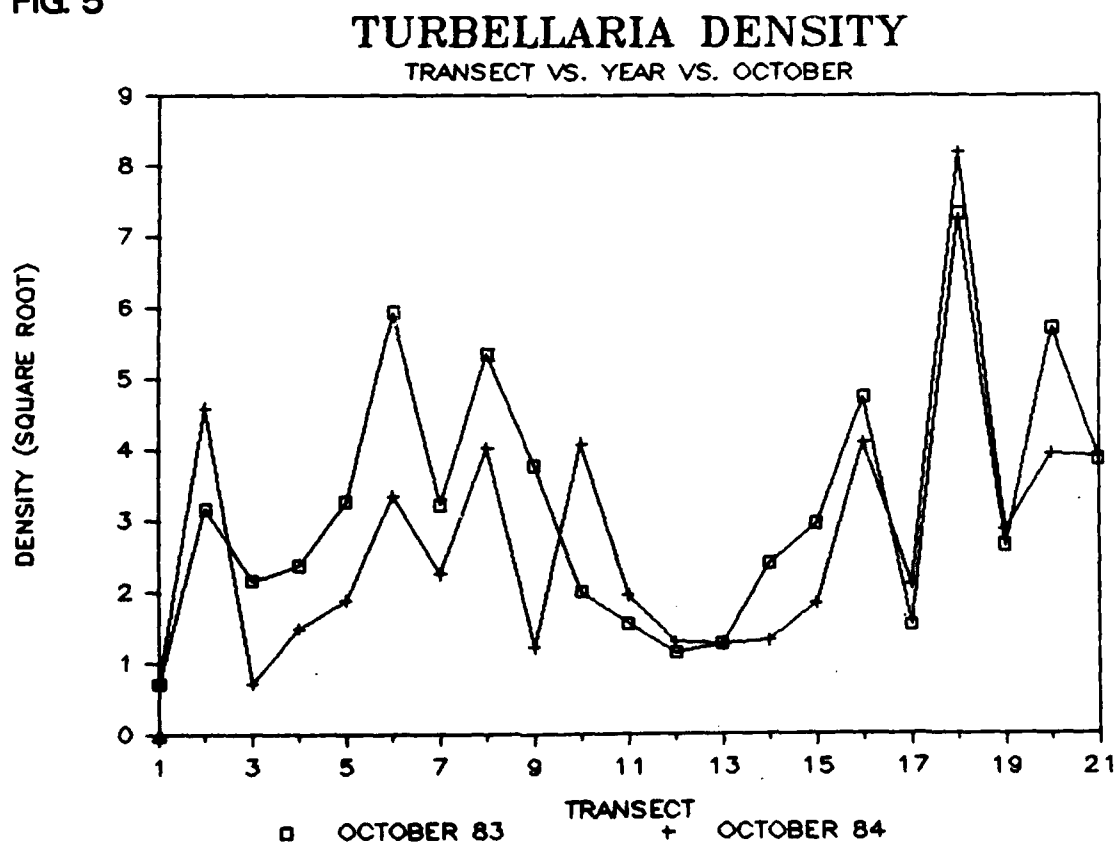


FIG. 6

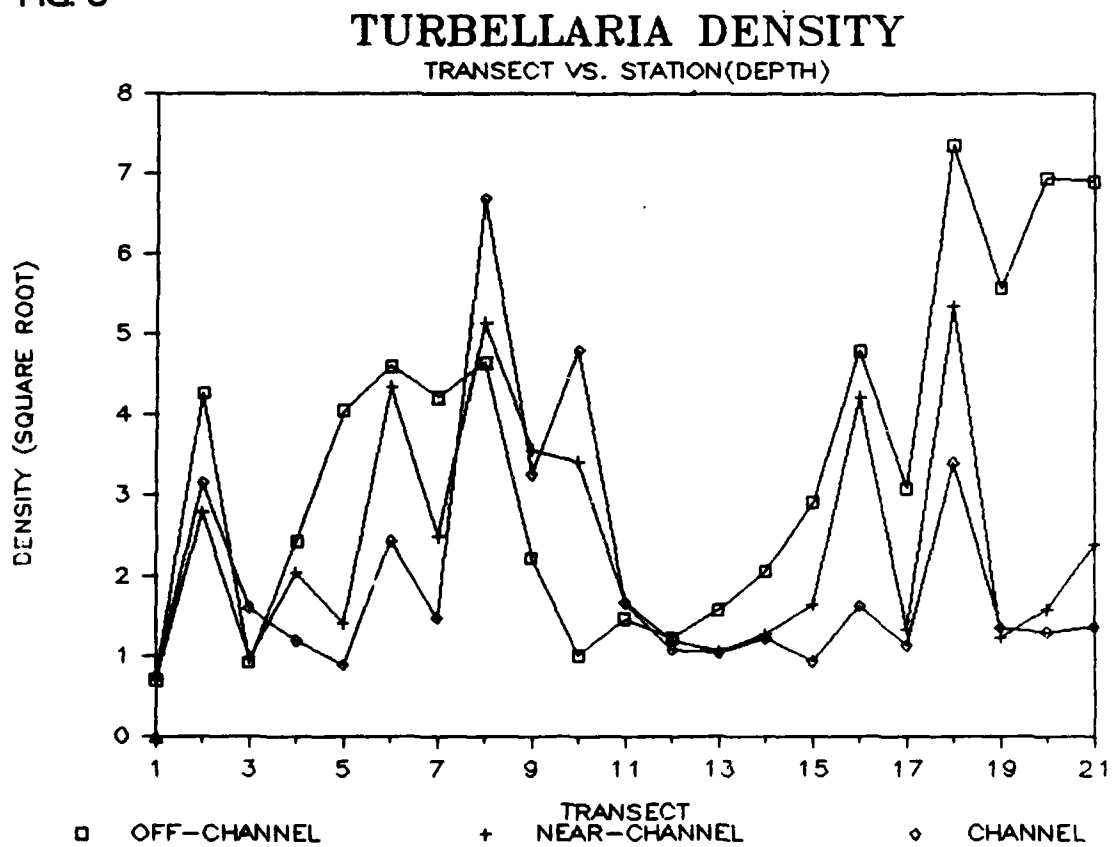


FIG. 7

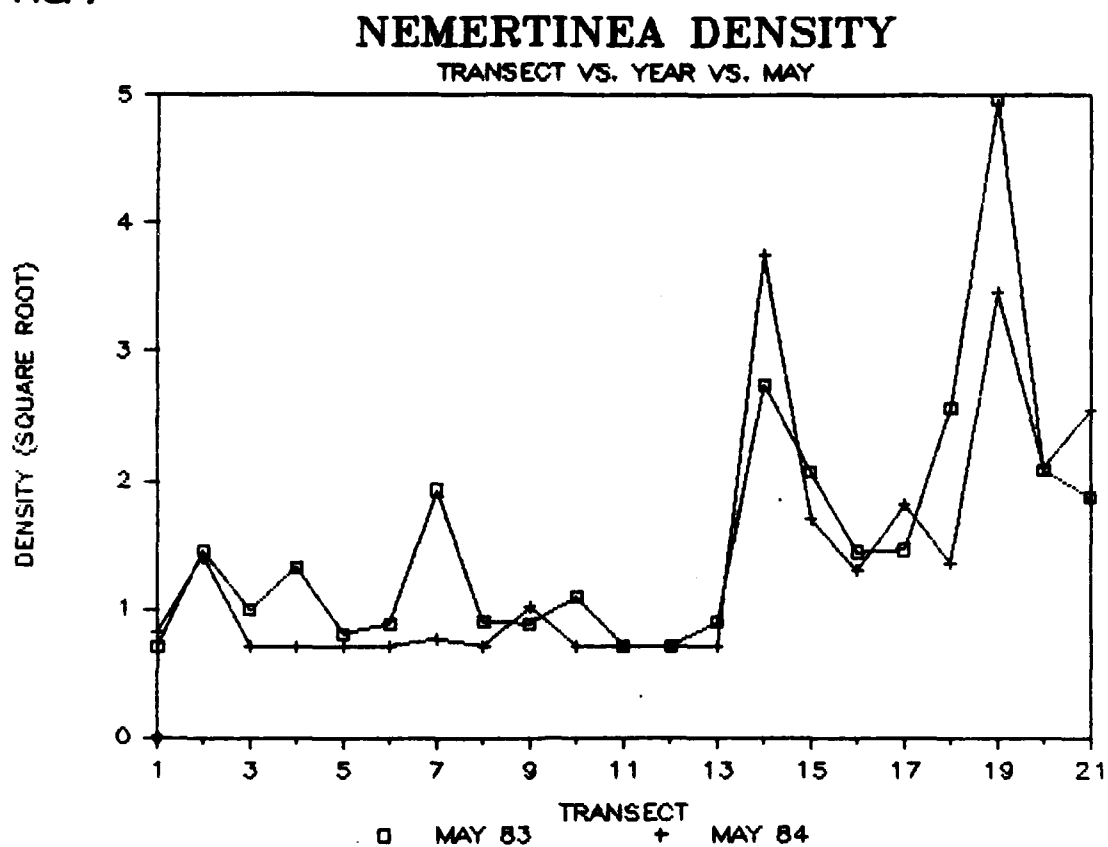


FIG. 8

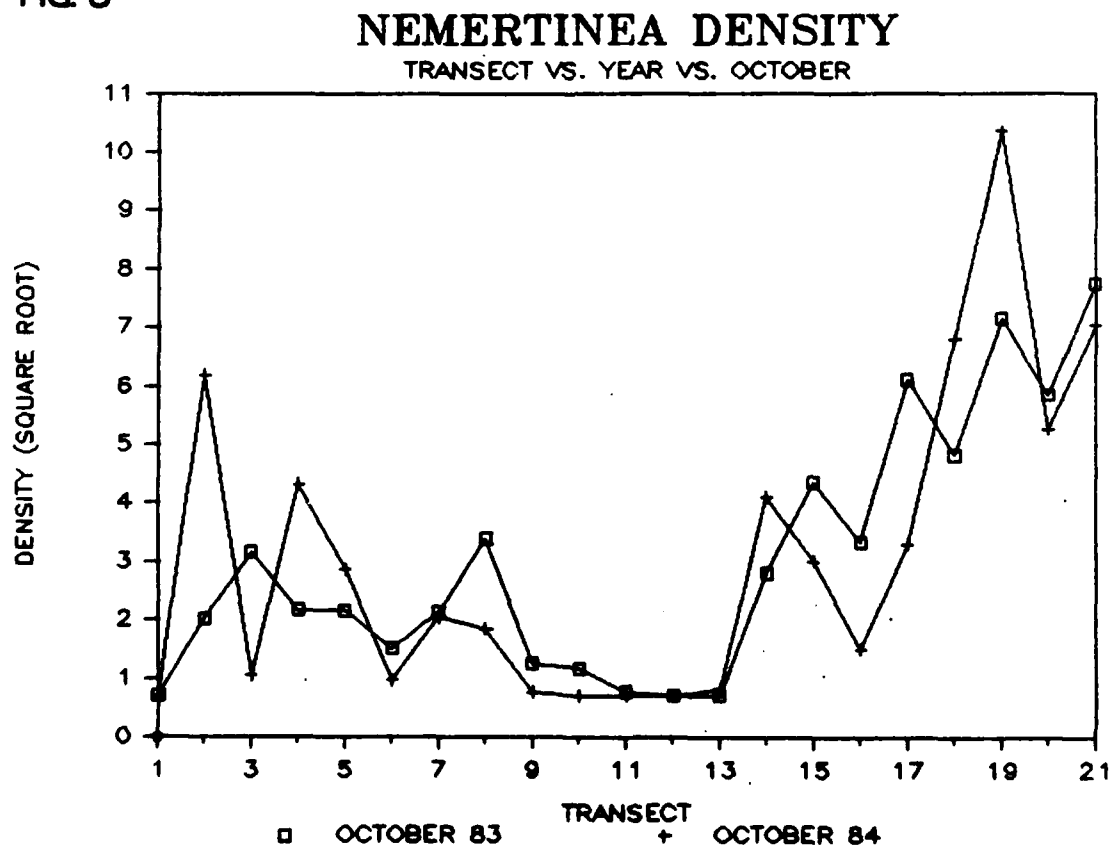


FIG. 9

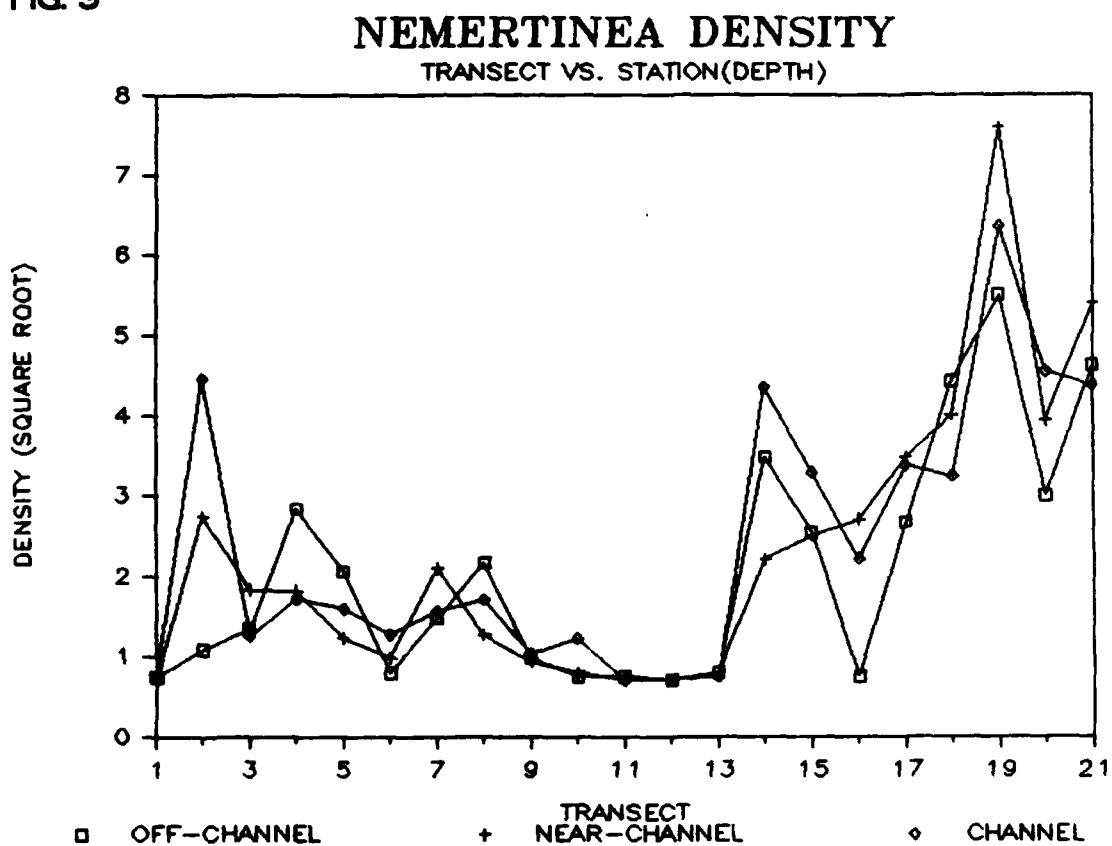


FIG. 10

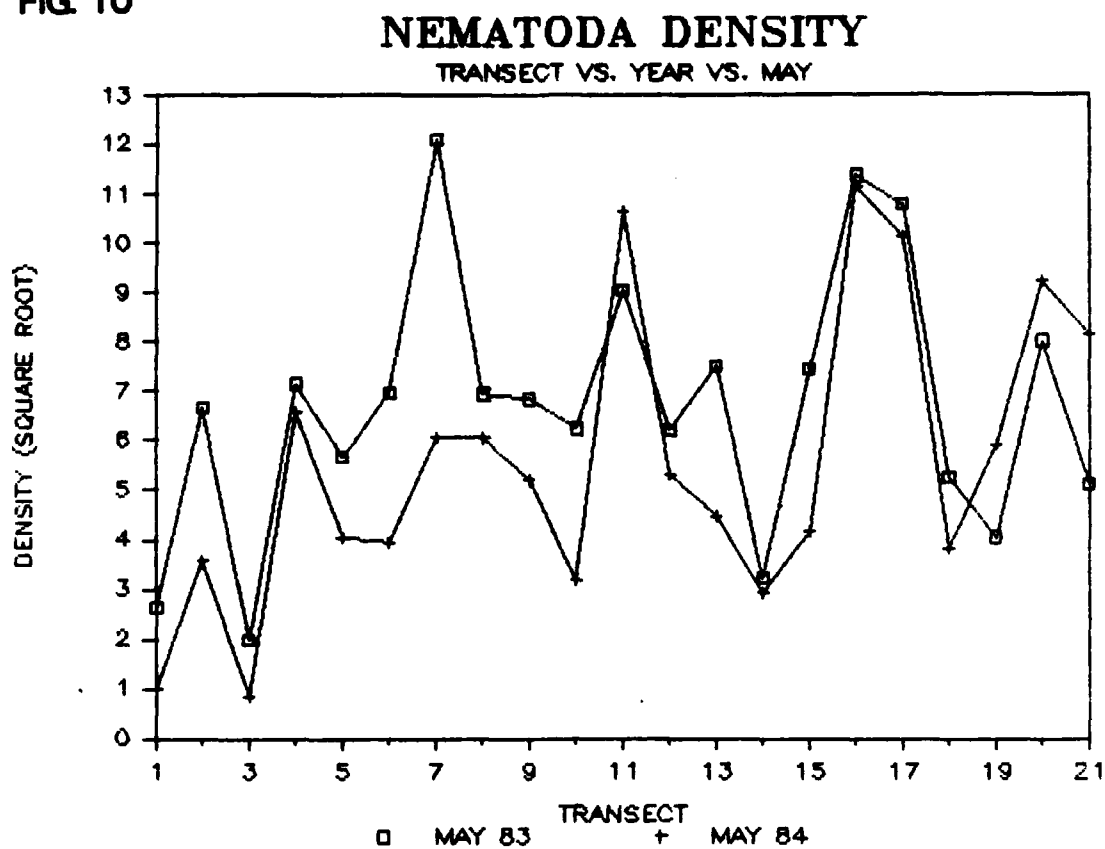


FIG. 11

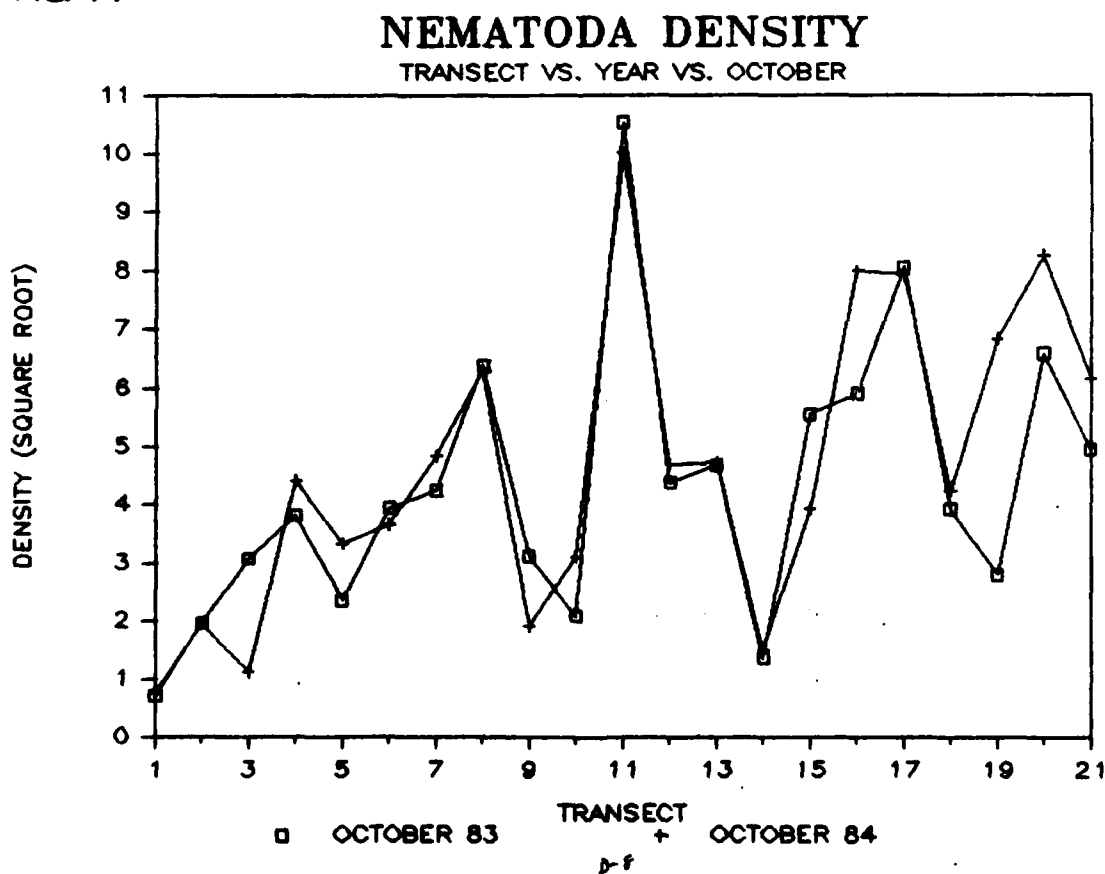


FIG 12

NEMATODA DENSITY TRANSECT VS. STATION(DEPTH)

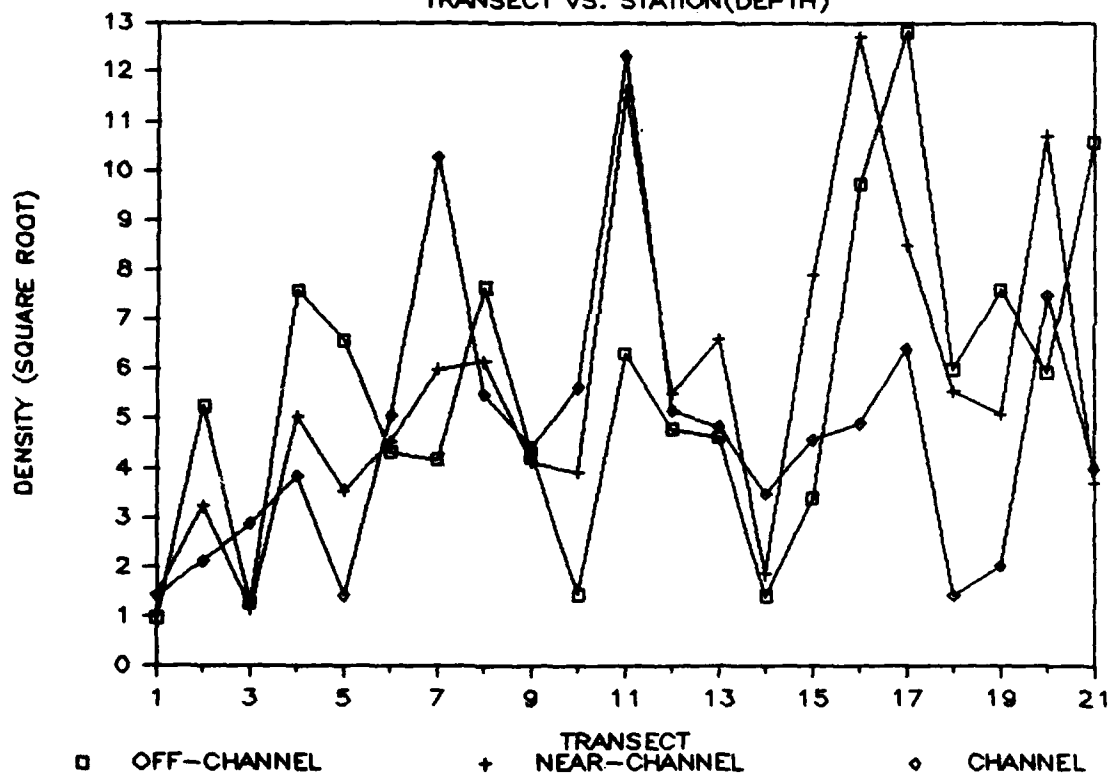


FIG. 13

HIRUDINEA DENSITY

TRANSECT VS. YEAR VS. MAY

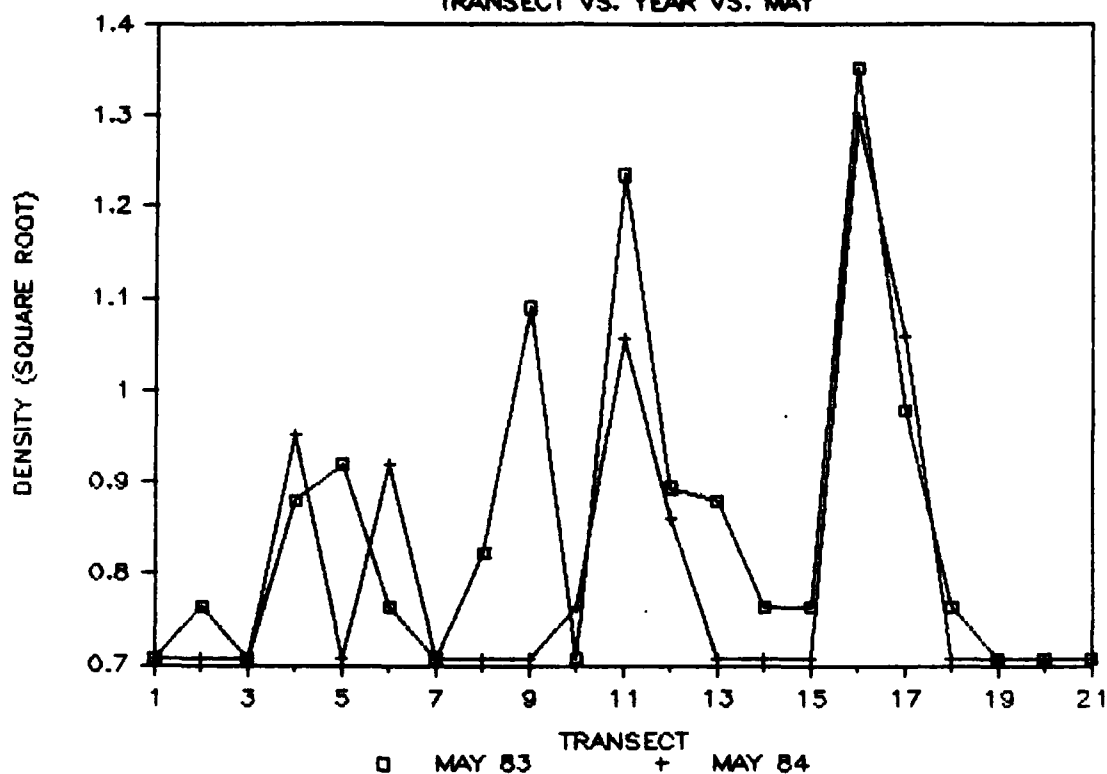


FIG. 14

HIRUDINEA DENSITY

TRANSECT VS. YEAR VS. OCTOBER

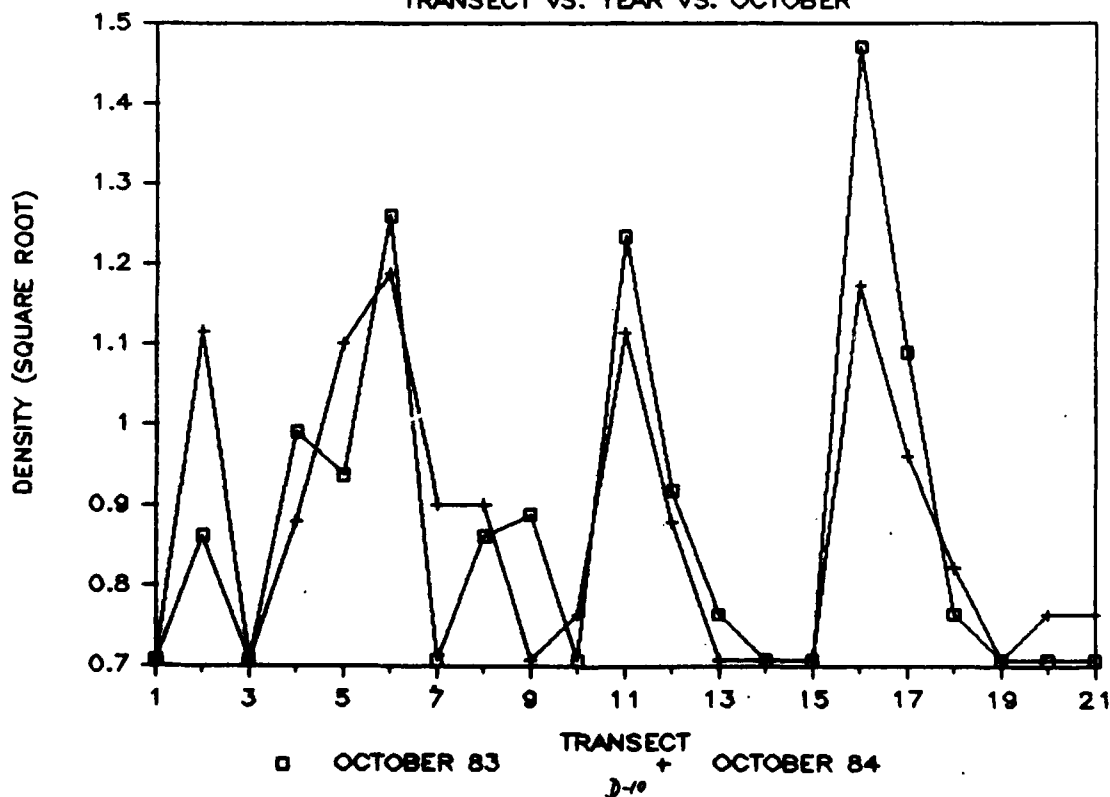


FIG. 15

HIRUDINEA DENSITY

TRANSECT VS. STATION(DEPTH)

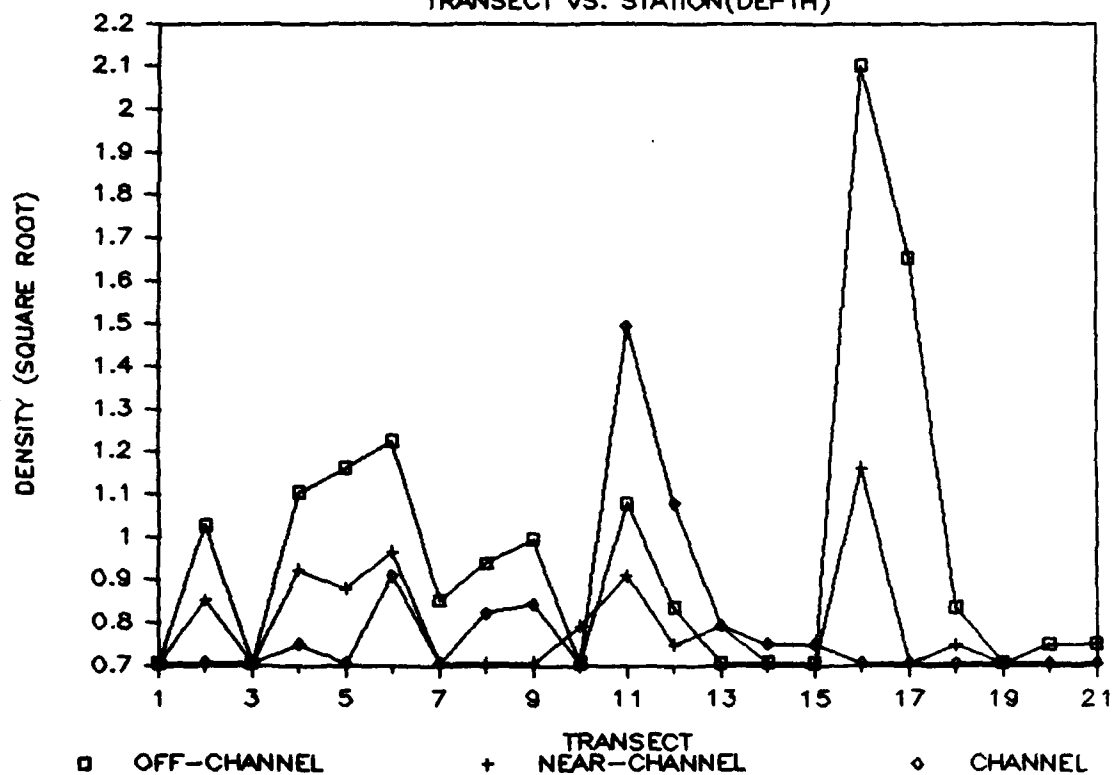


FIG 16

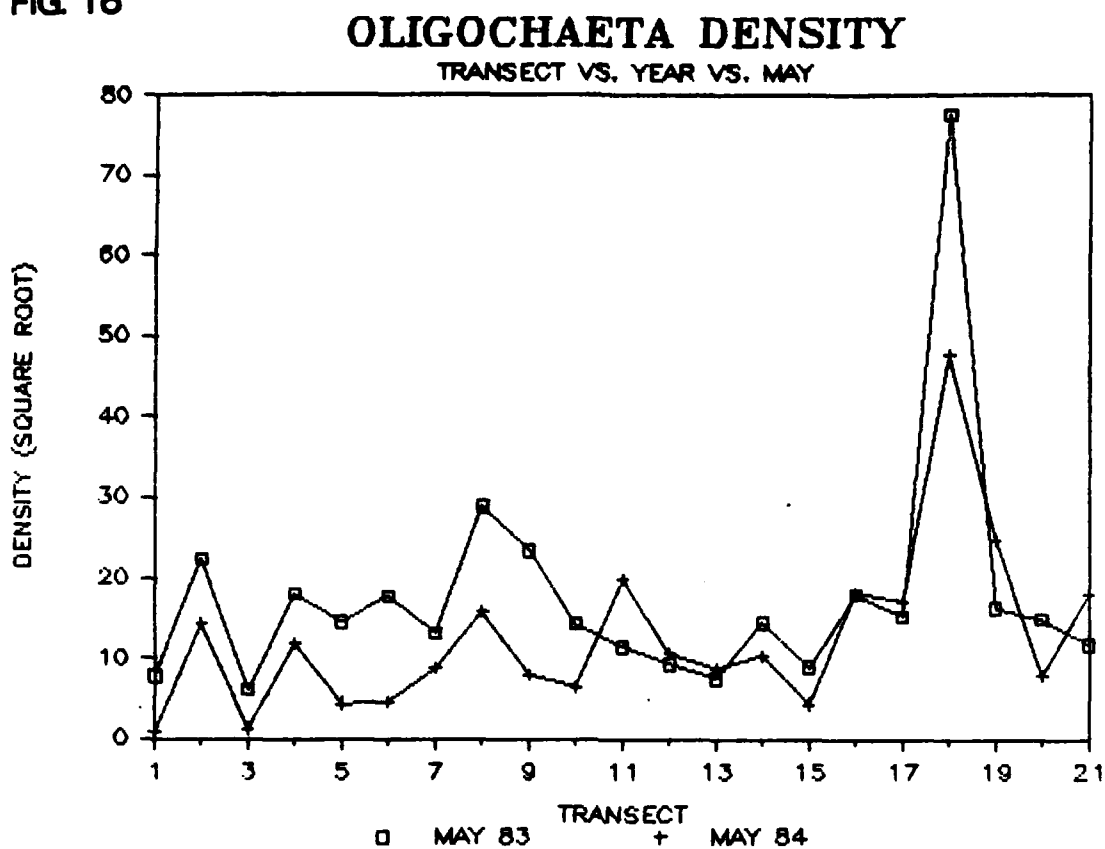


FIG. 17

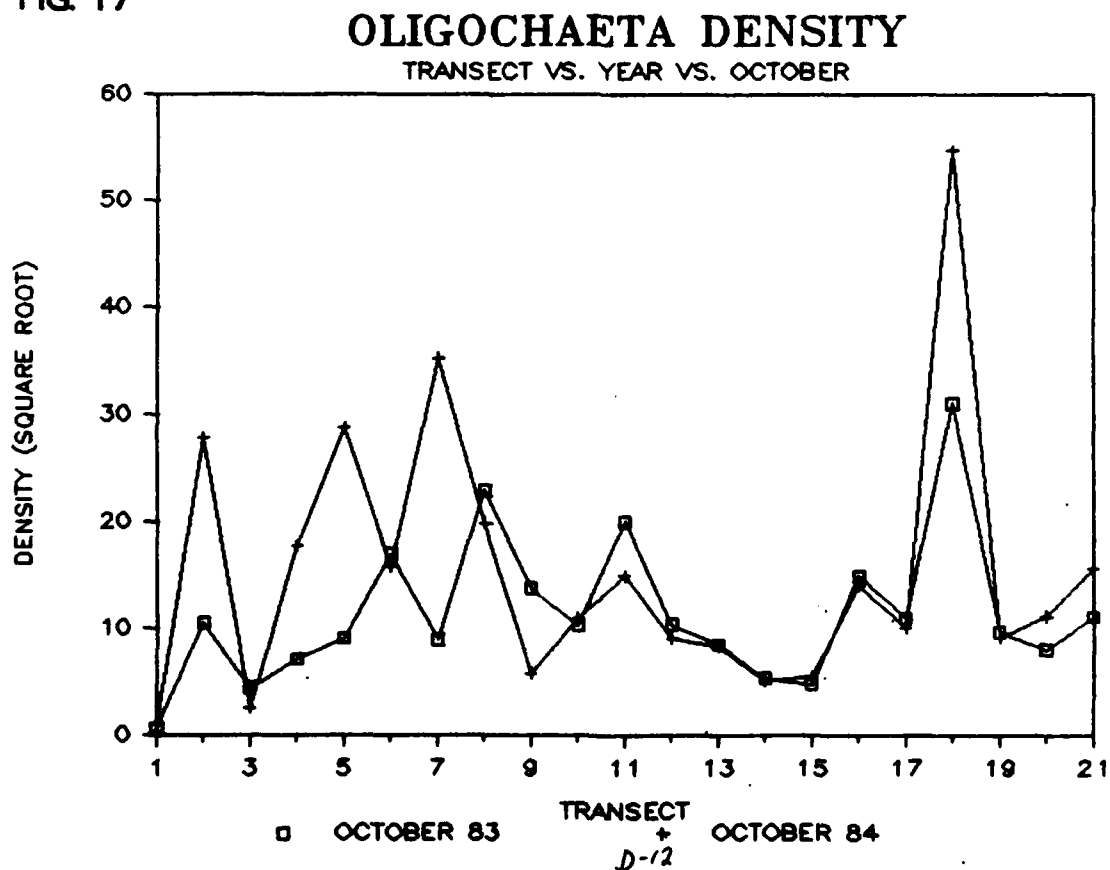


FIG. 18

OLIGOCHAETA DENSITY TRANSECT VS. STATION(DEPTH)

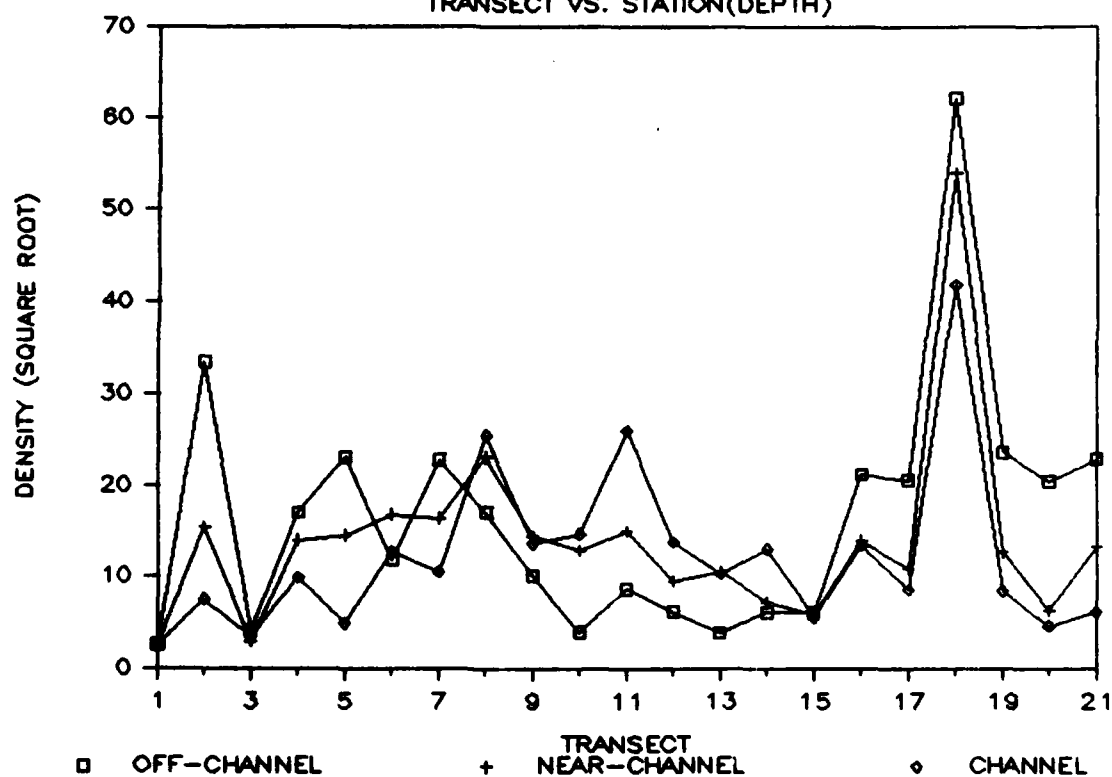


FIG. 19

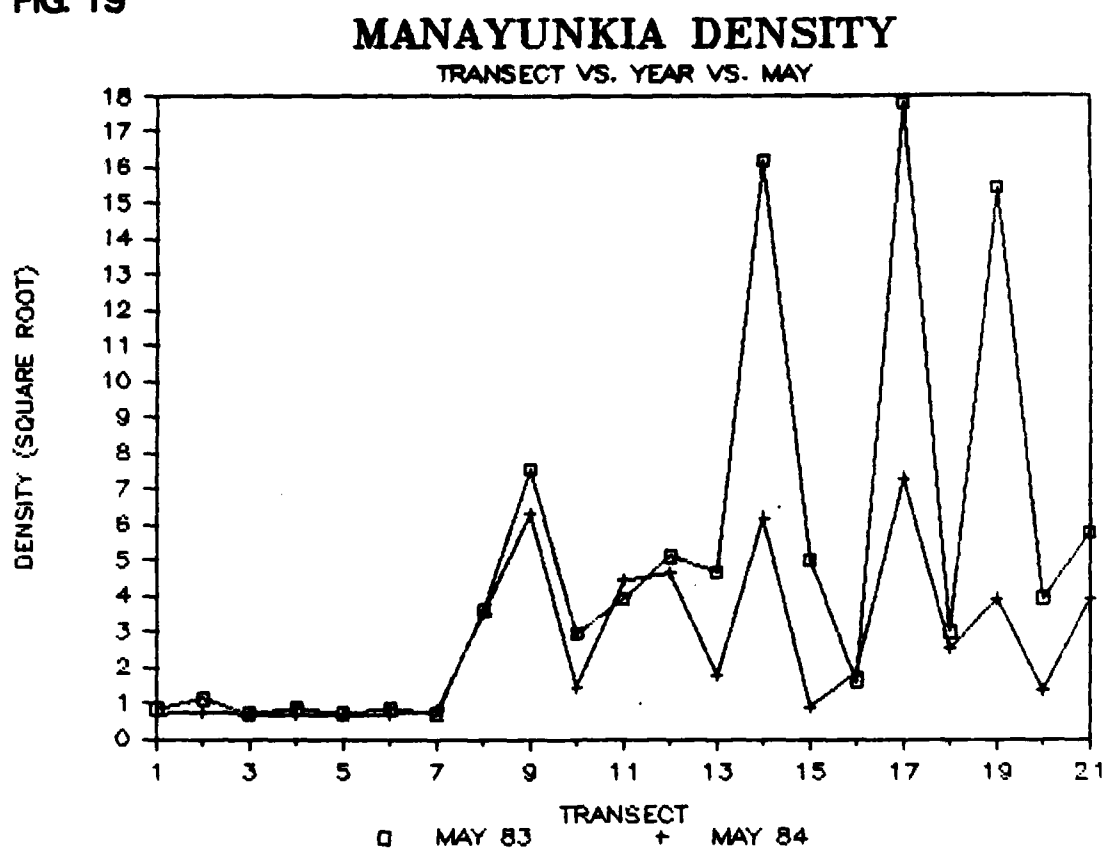


FIG. 20

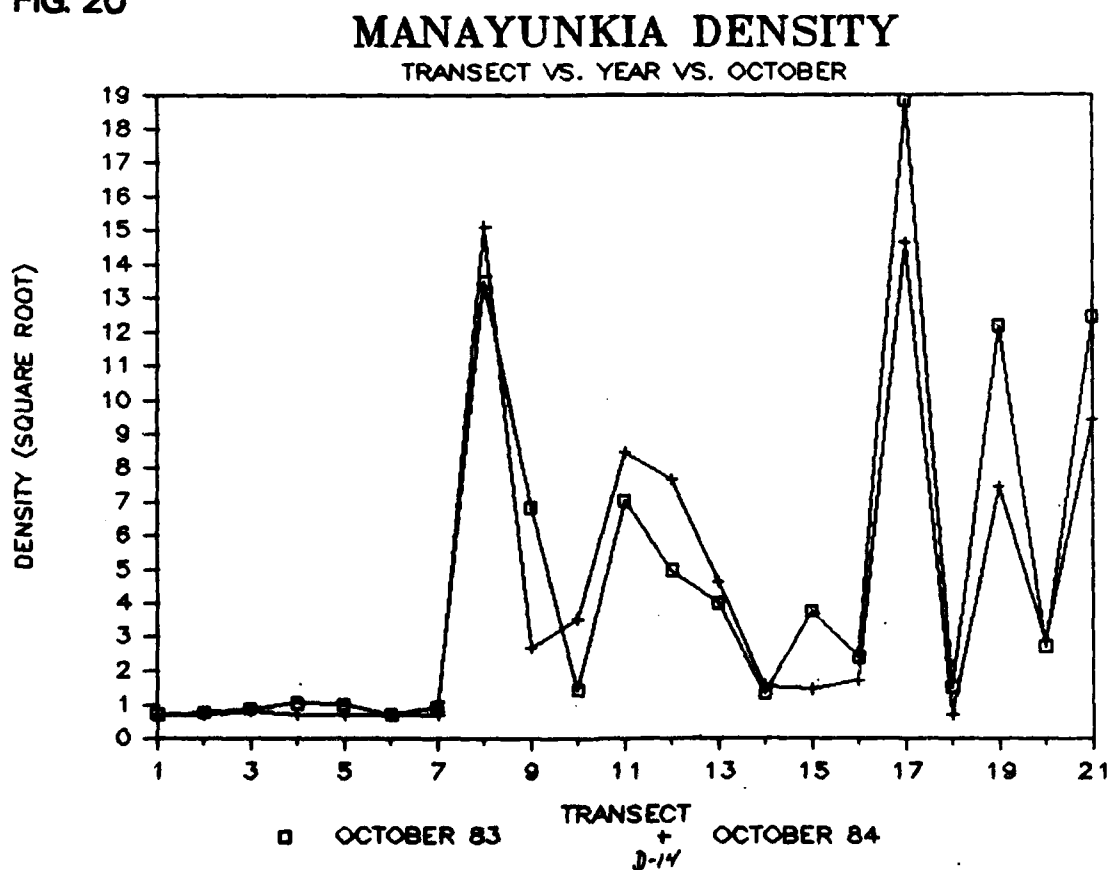


FIG. 21

MANAYUNKIA DENSITY

TRANSECT VS. STATION (DEPTH)

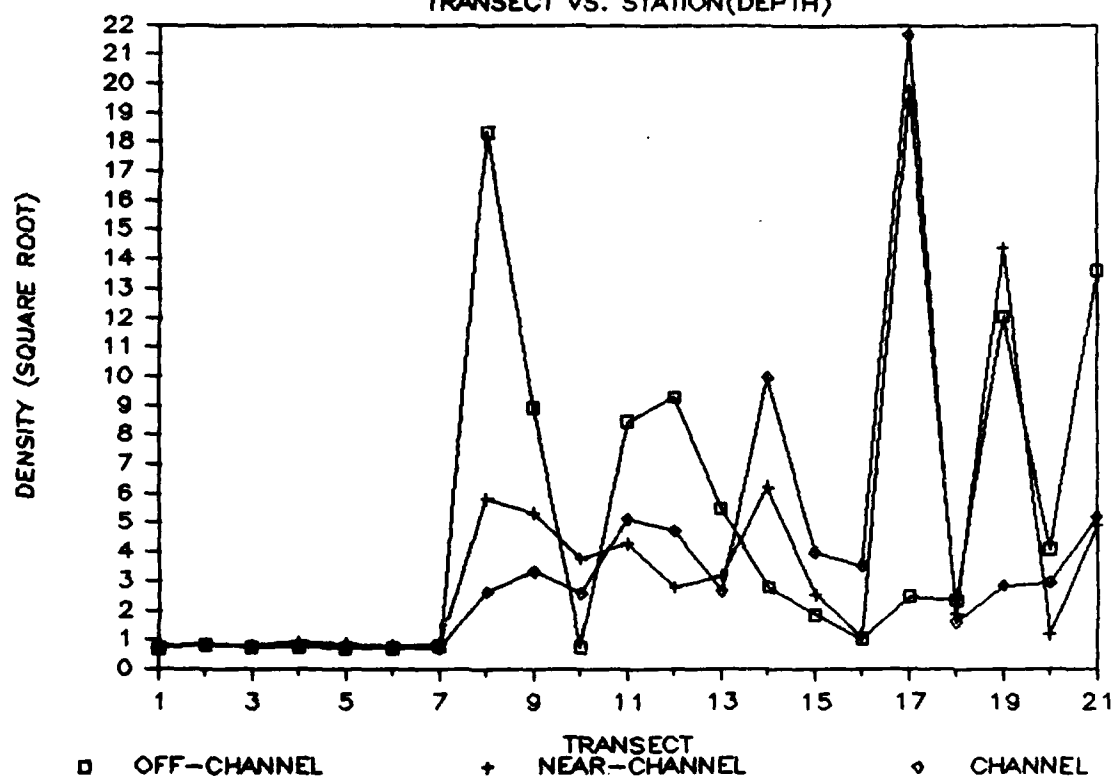


FIG 22

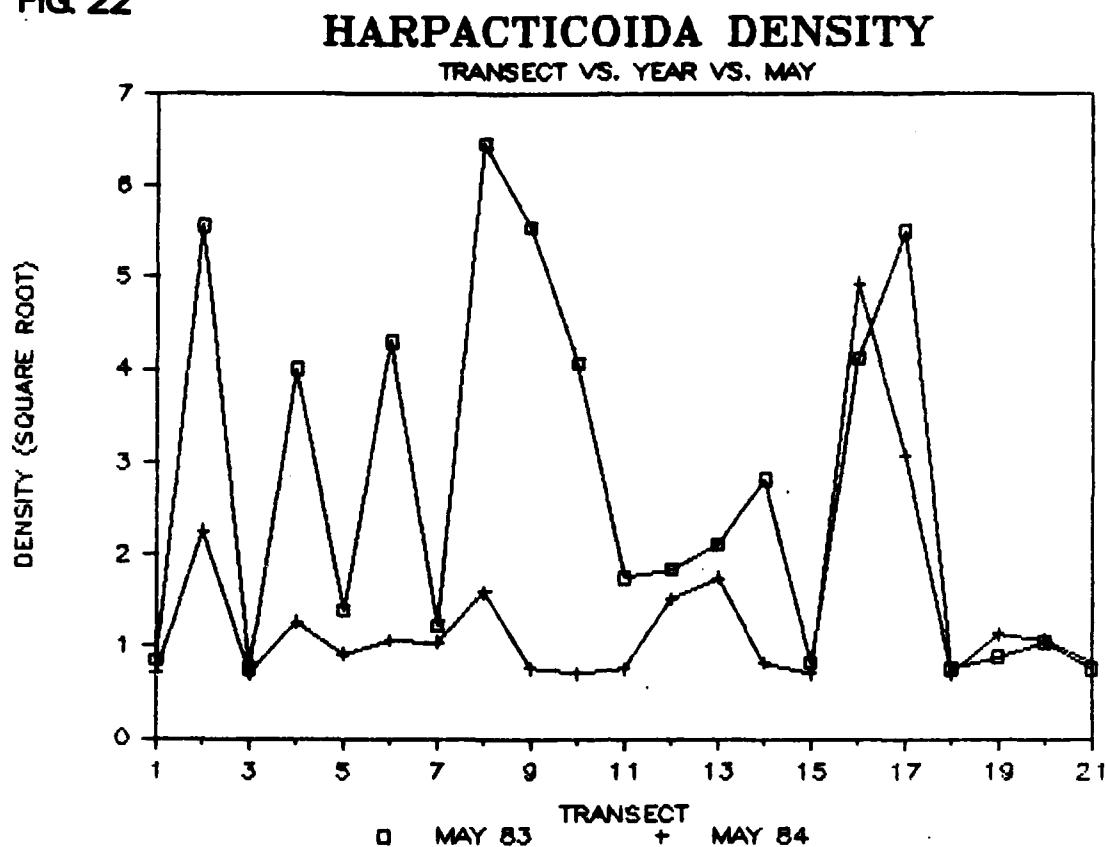


FIG 23

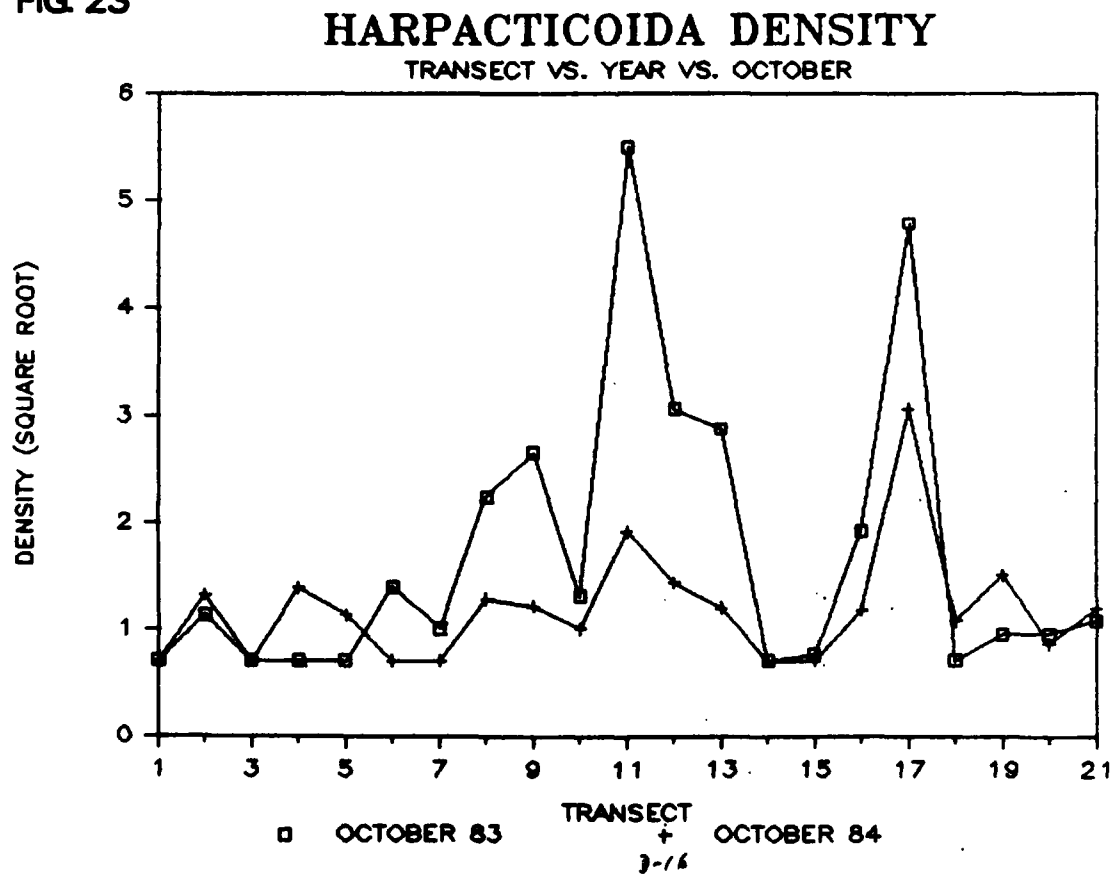


FIG 24

HARPACTICOIDA DENSITY

TRANSECT VS. STATION(DEPTH)

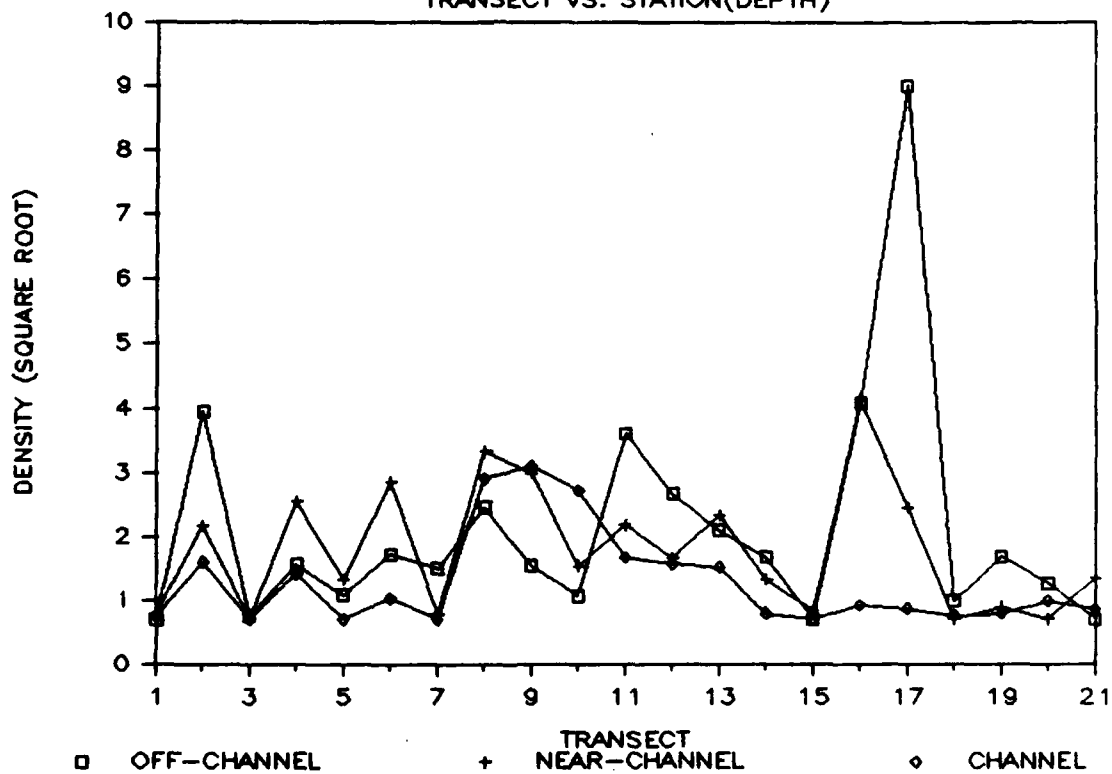


FIG. 25

OSTRACODA DENSITY

TRANSECT VS. YEAR VS. MAY

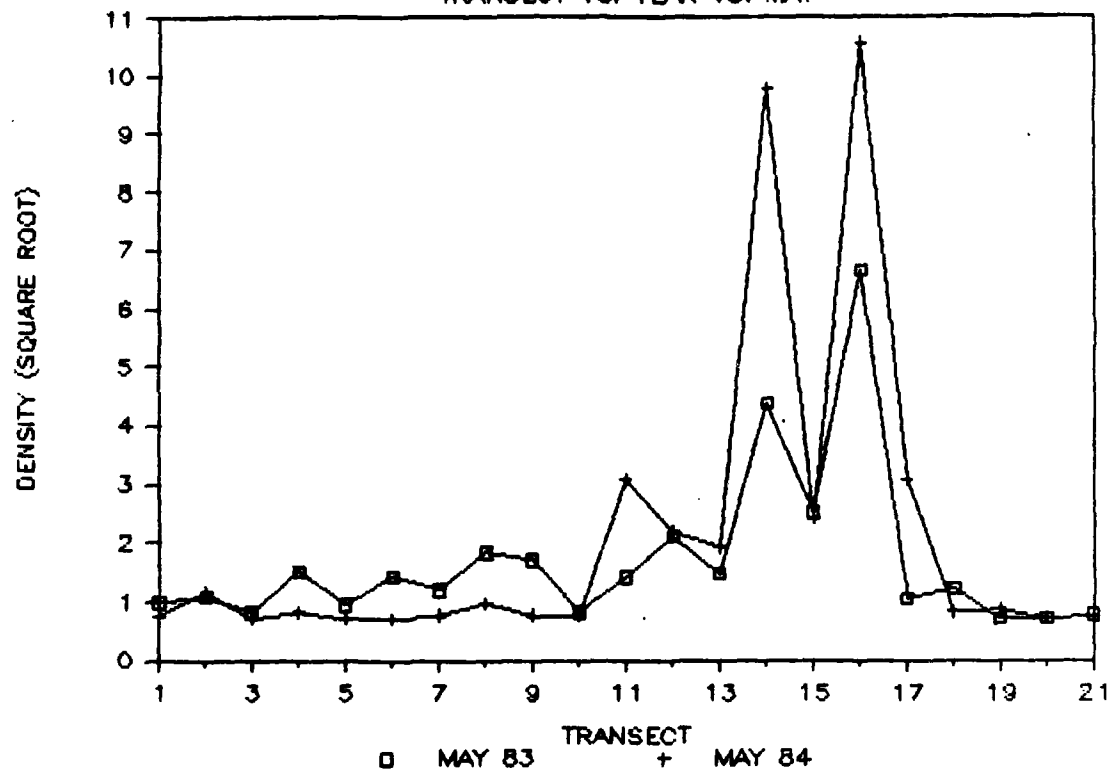


FIG. 26

OSTRACODA DENSITY

TRANSECT VS. YEAR VS. OCTOBER

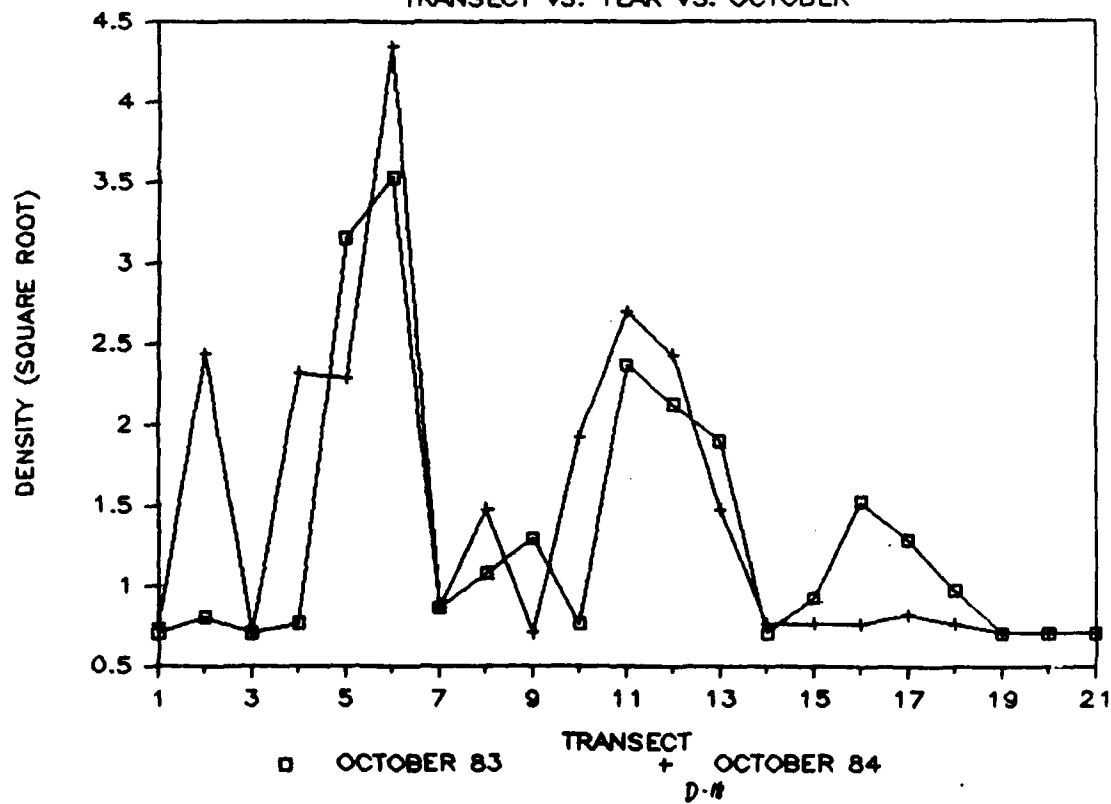


FIG. 27

OSTRACODA DENSITY TRANSECT VS. STATION (DEPTH)

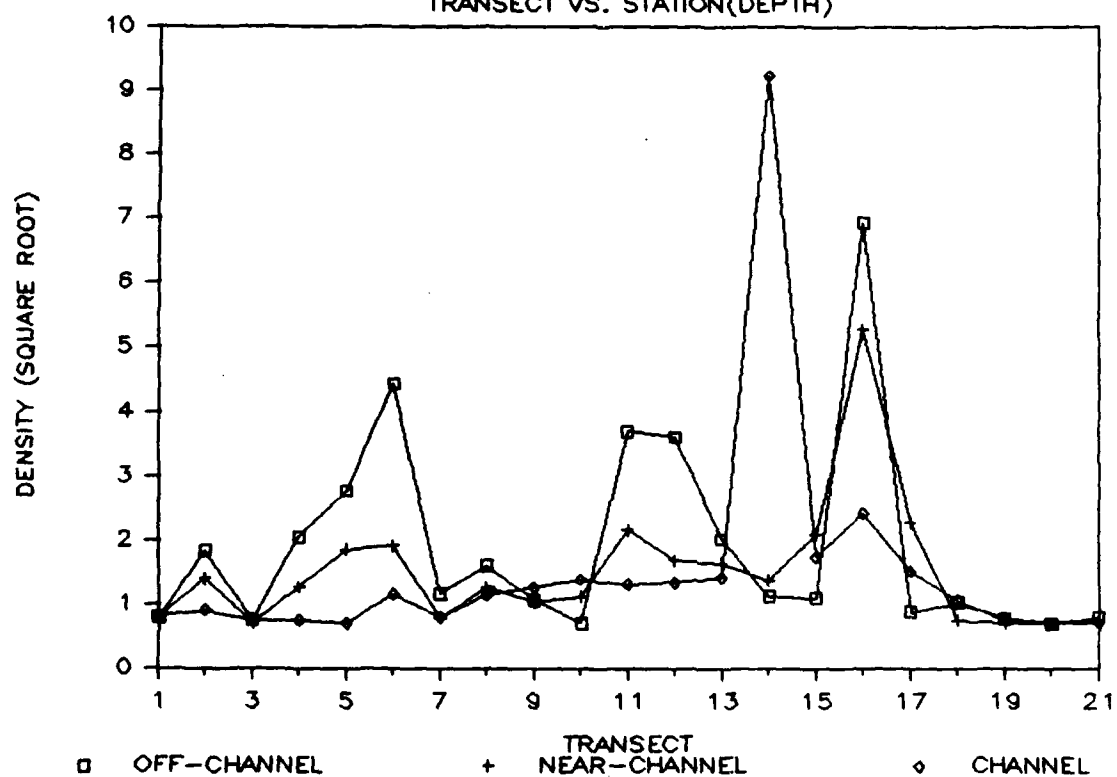


FIG. 28

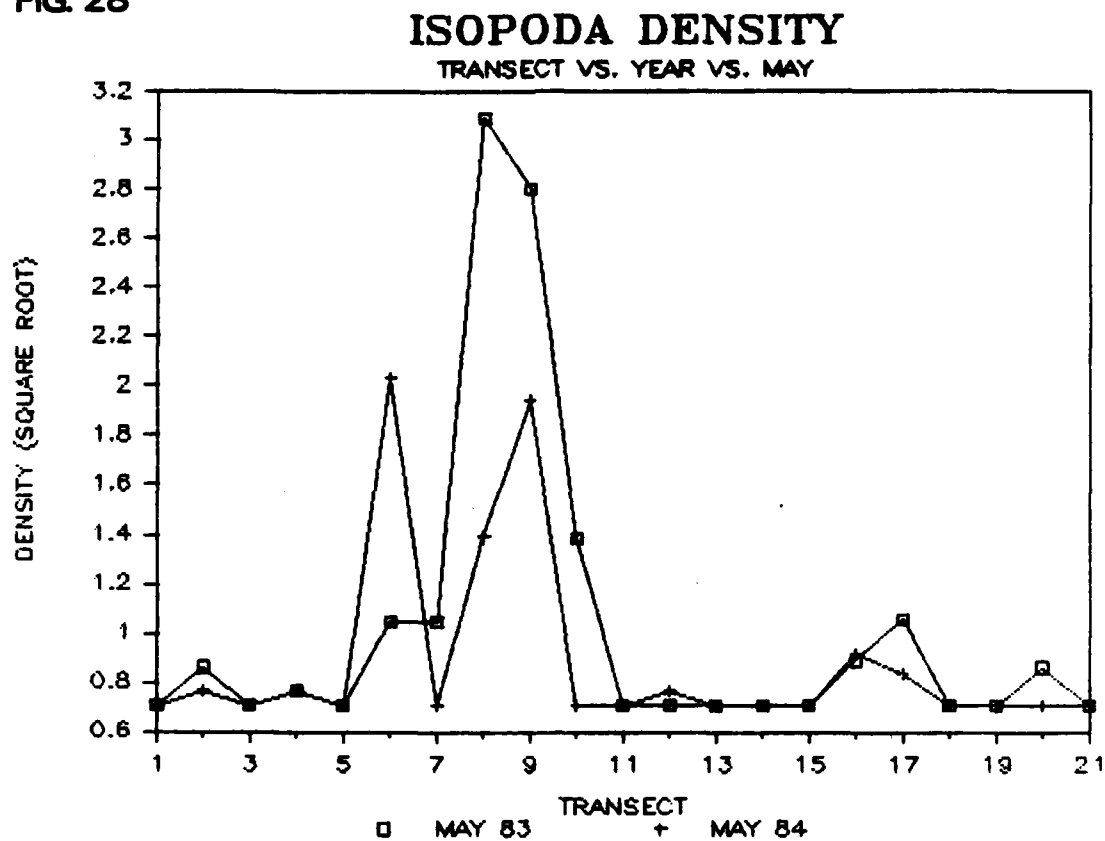


FIG. 29

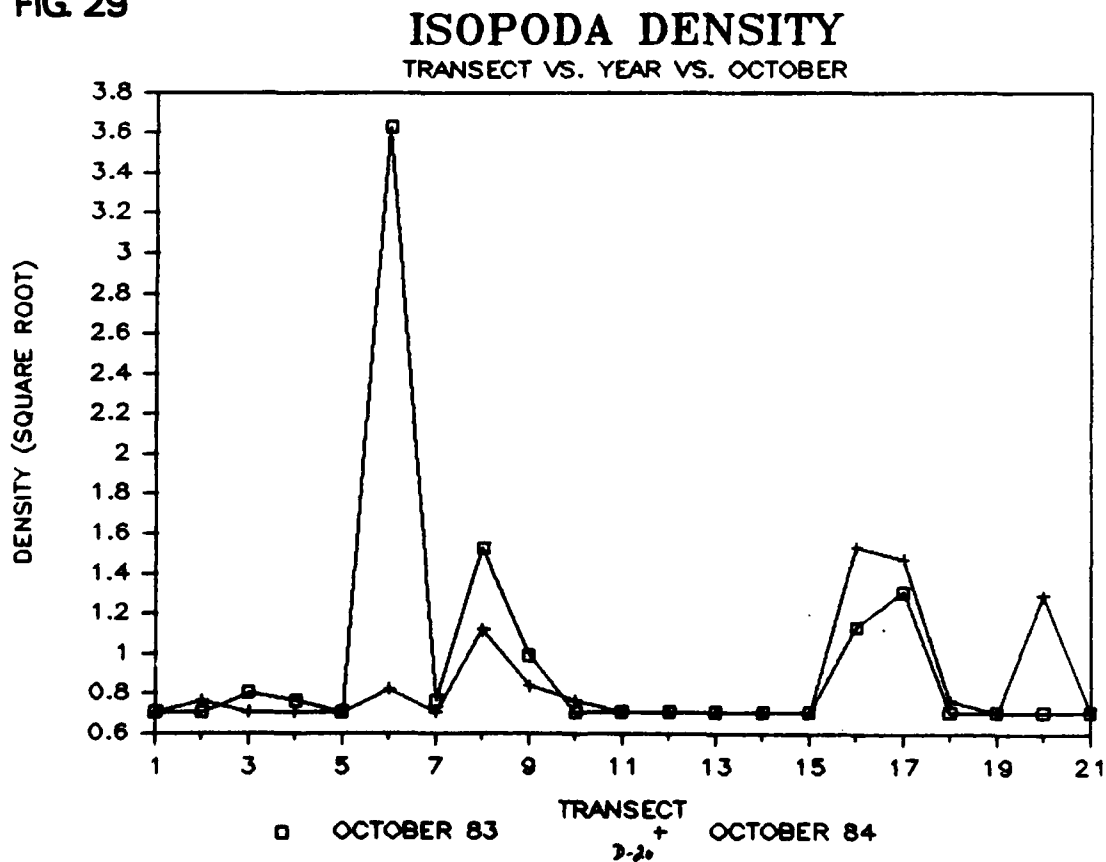


FIG. 30

ISOPODA DENSITY TRANSECT VS. STATION(DEPTH)

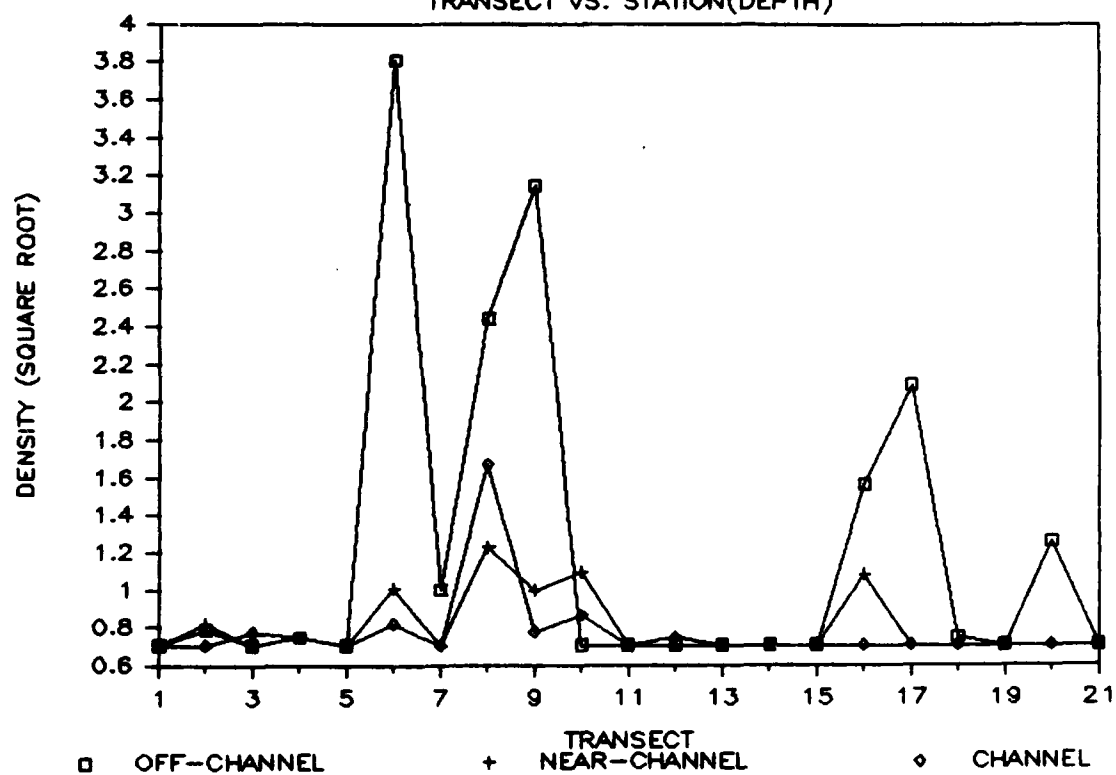


FIG. 31

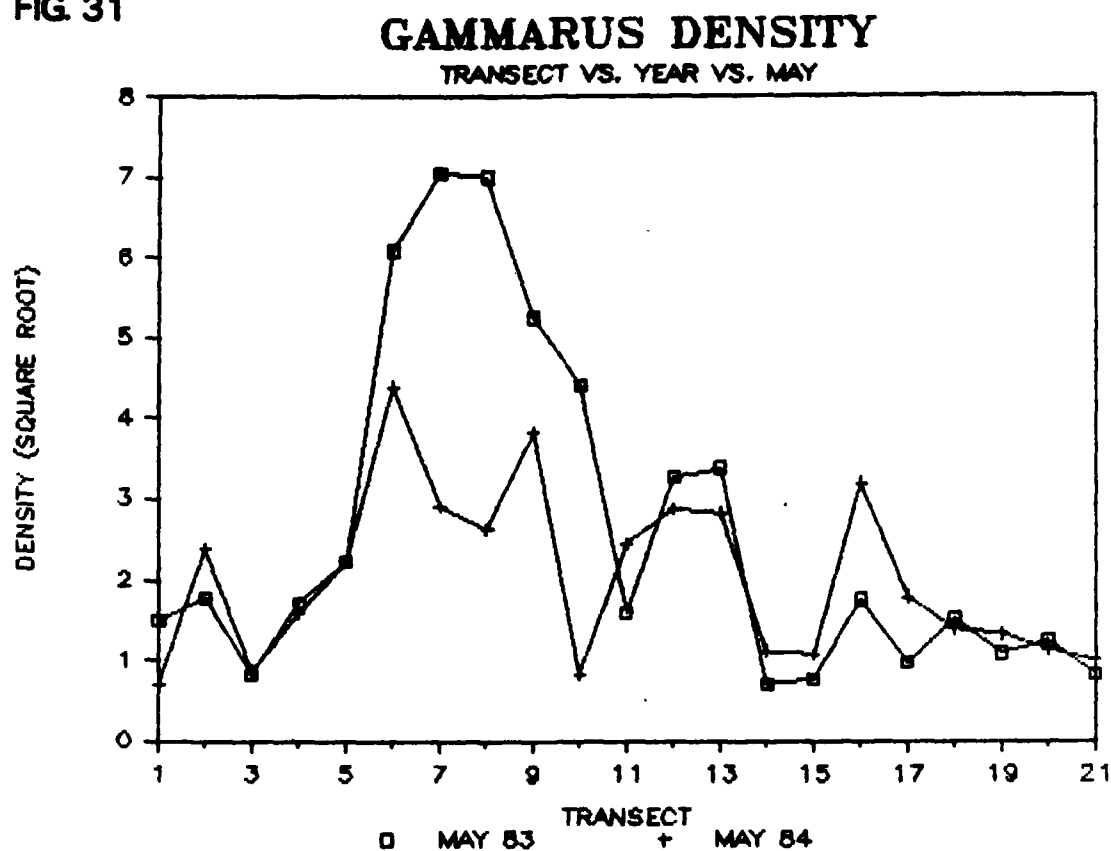


FIG. 32

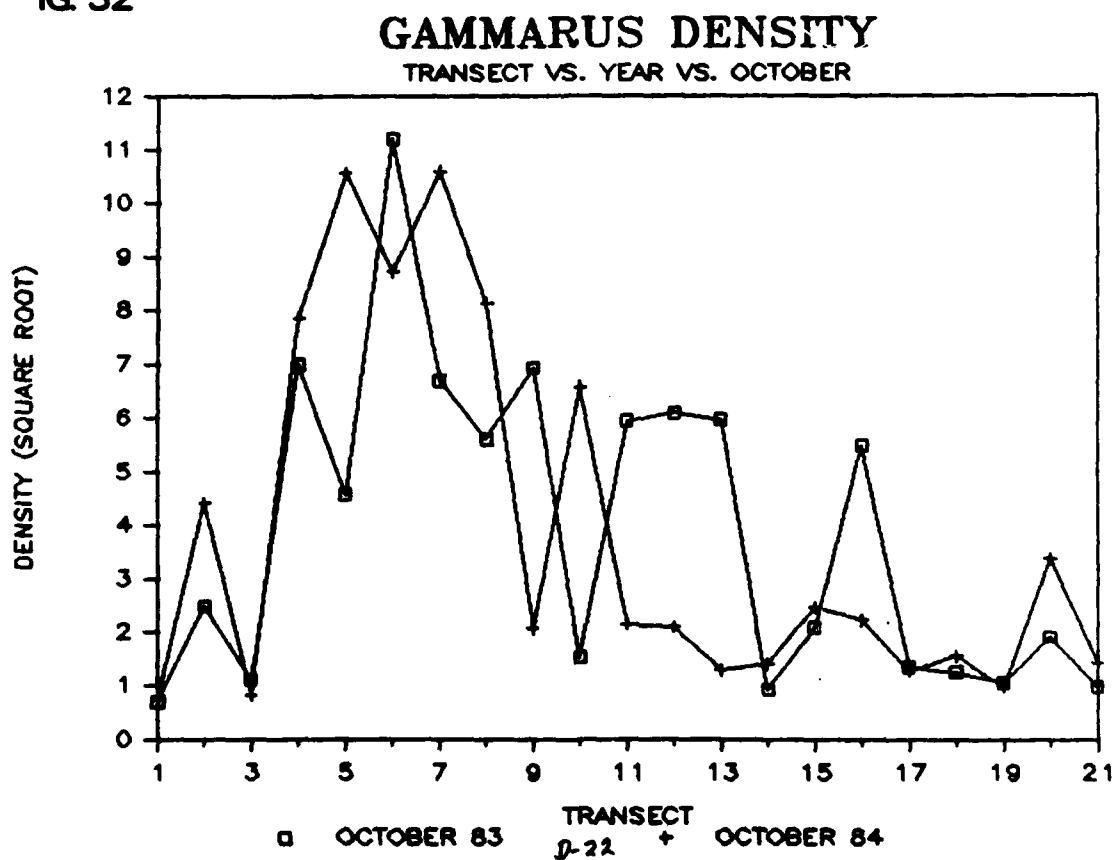


FIG. 33

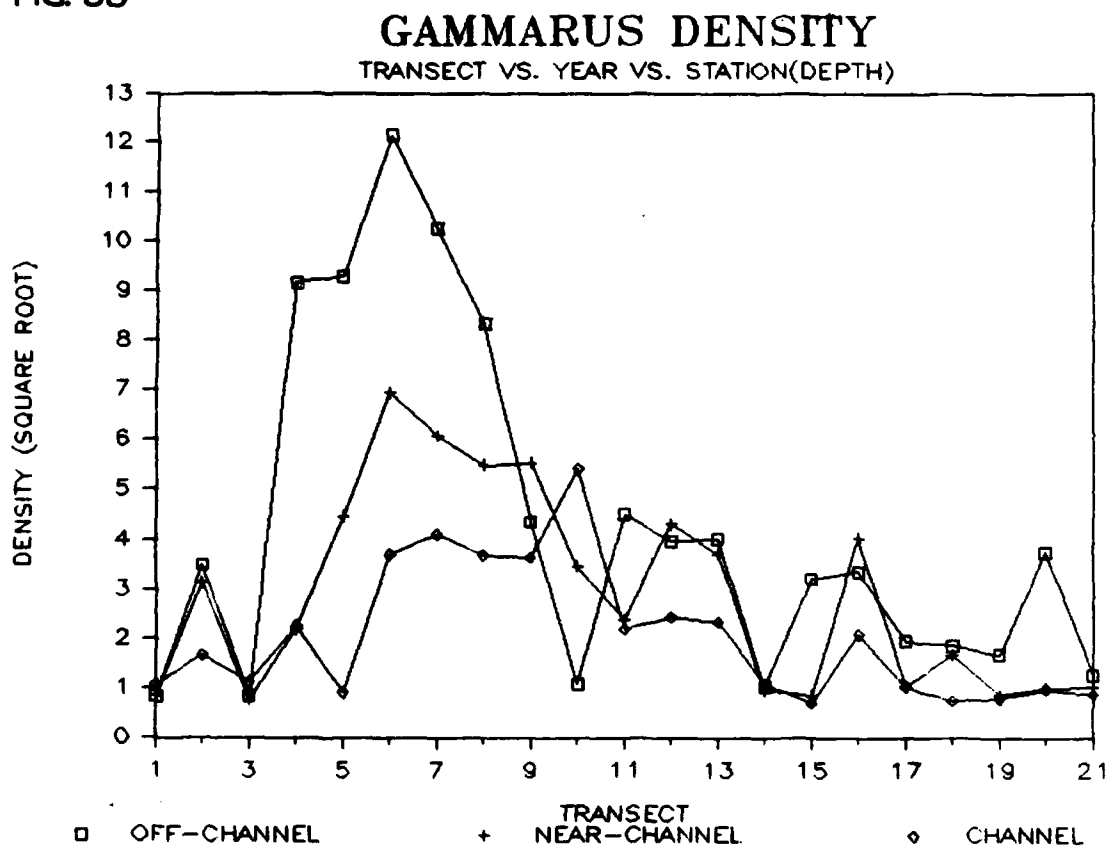


FIG. 34

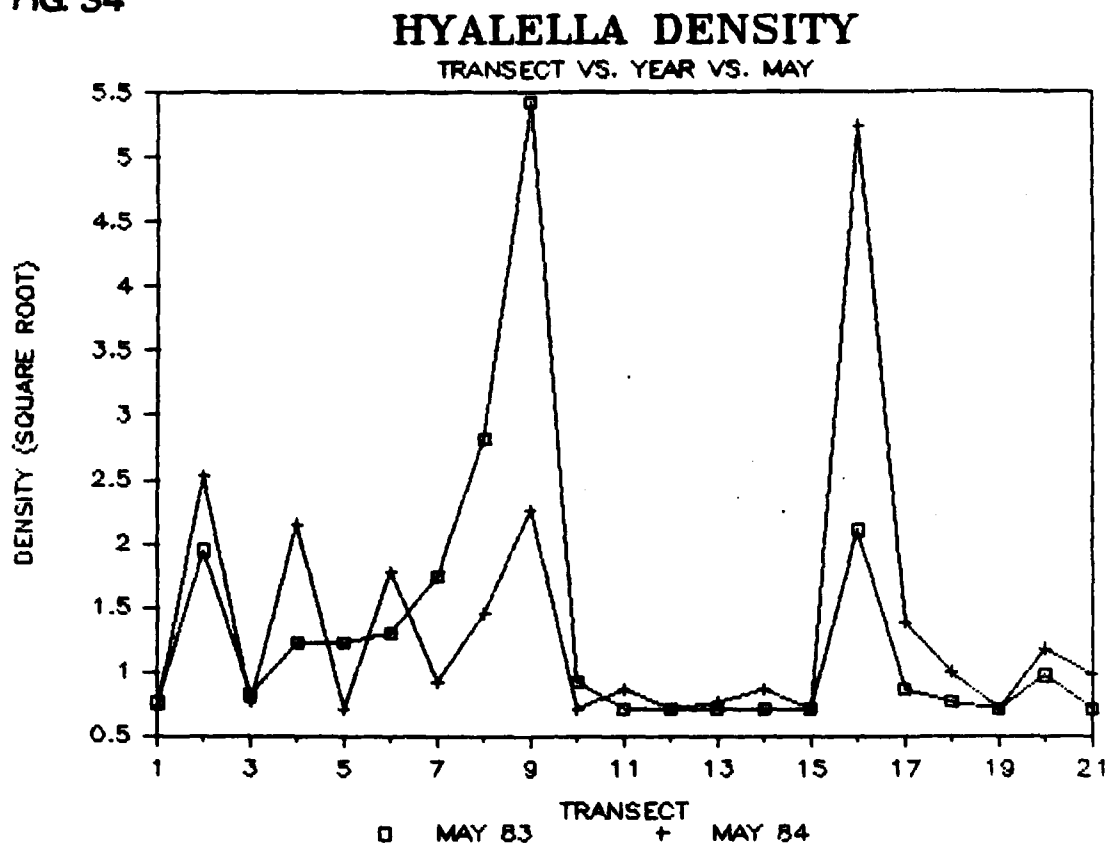


FIG. 35

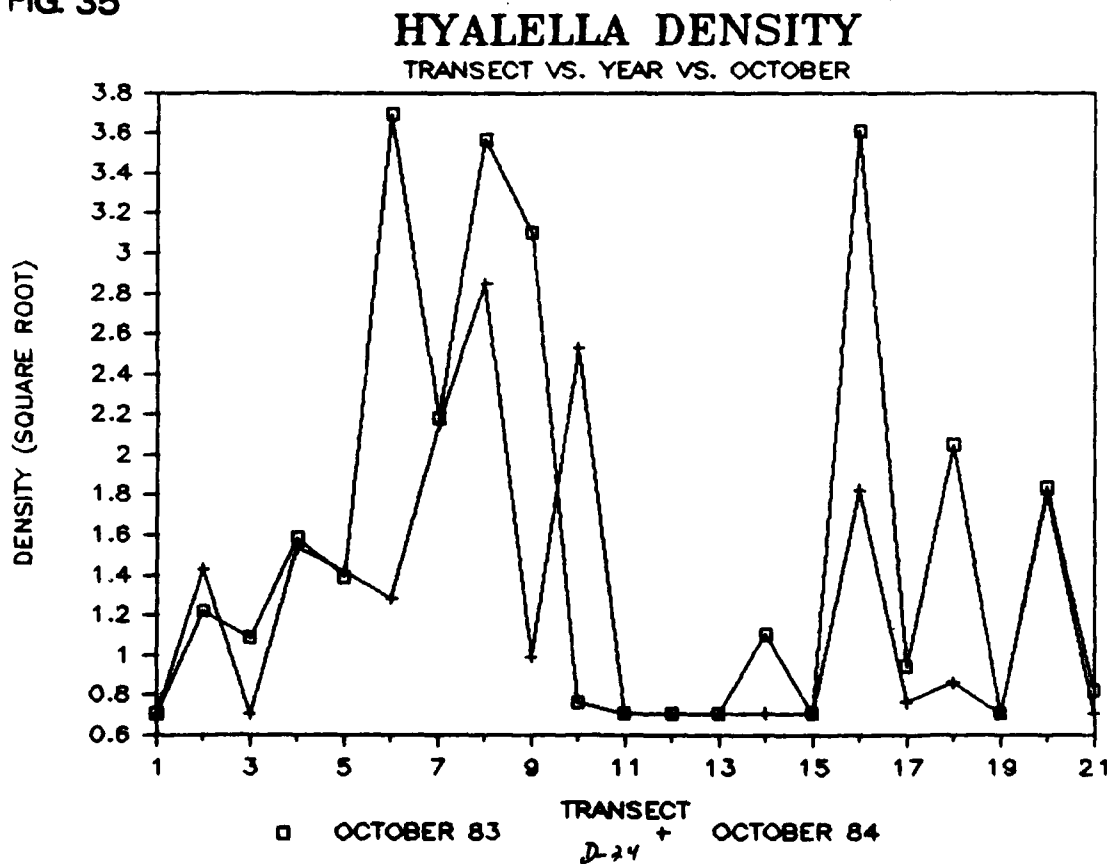


FIG. 36

HYALELLA DENSITY TRANSECT VS. STATION(DEPTH)

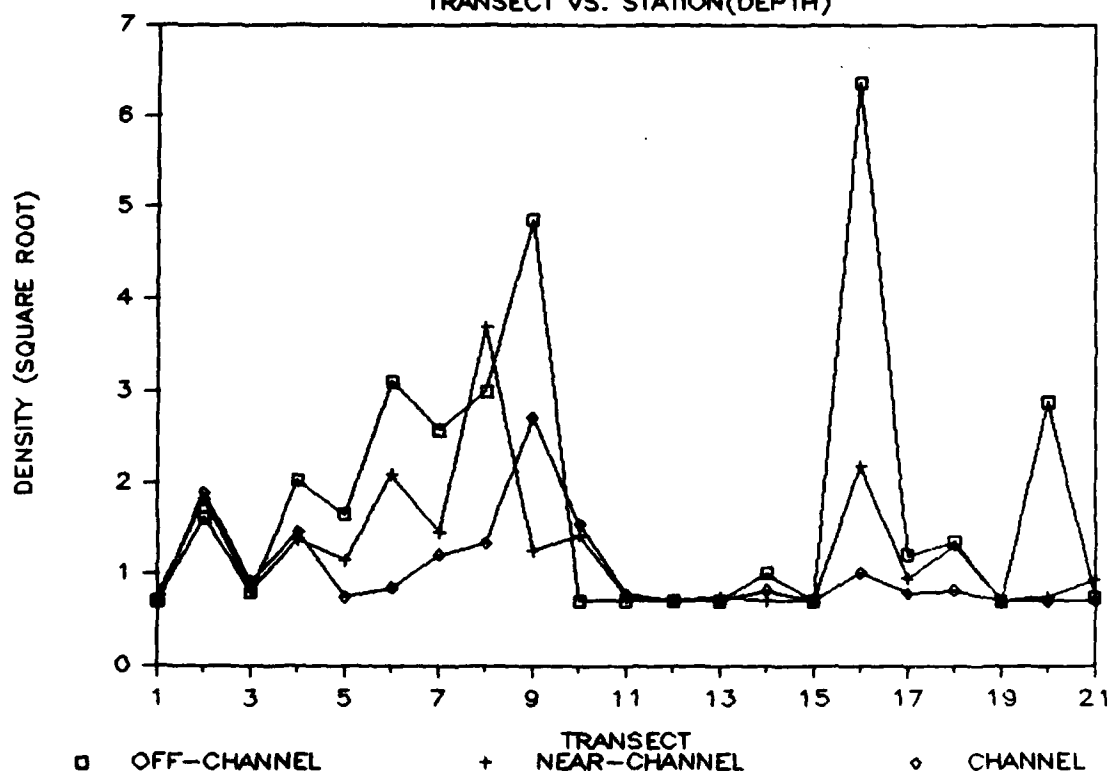


FIG. 37

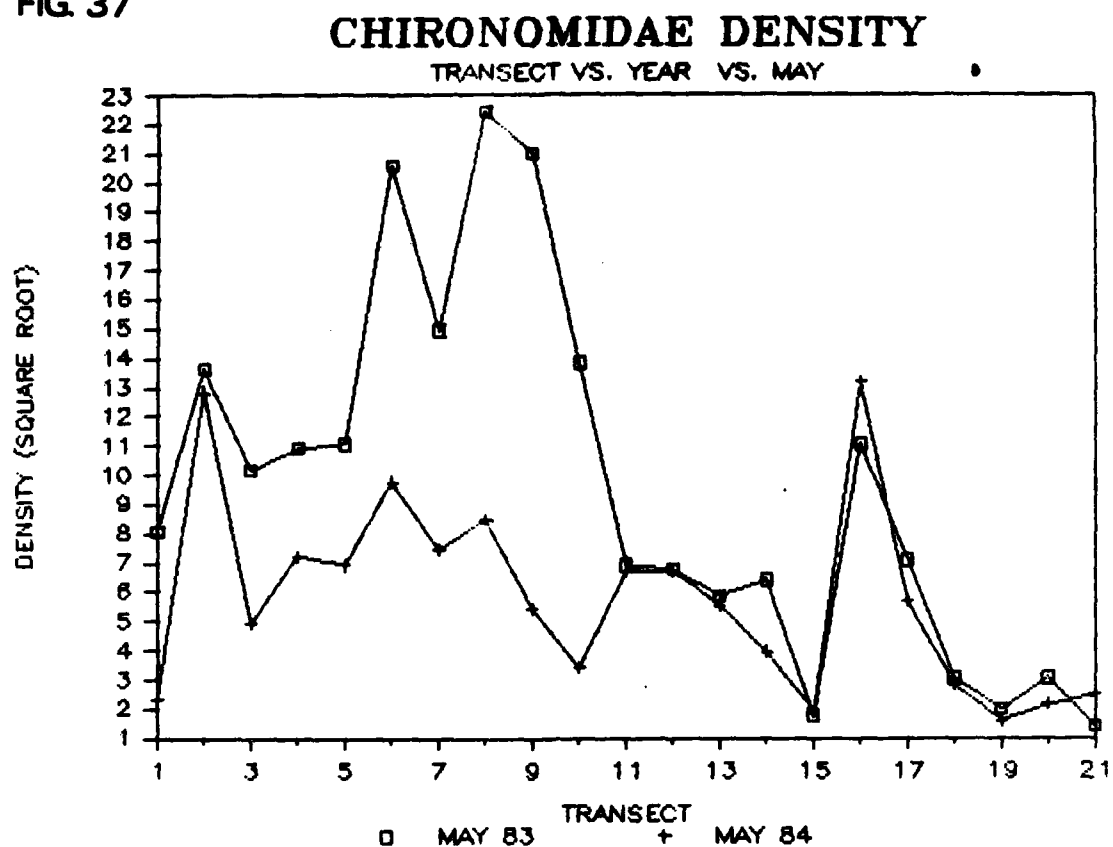


FIG. 38

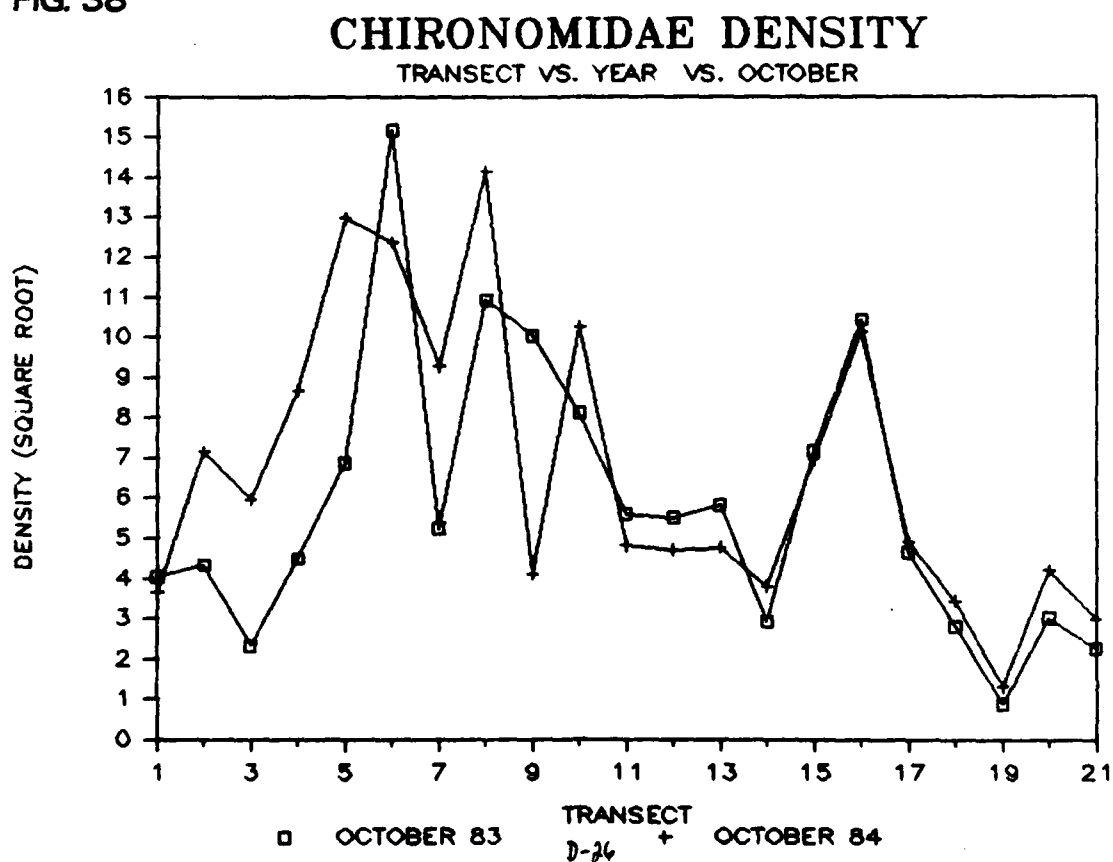


FIG. 39

CHIRONOMIDAE DENSITY

TRANSECT VS. STATION (DEPTH)

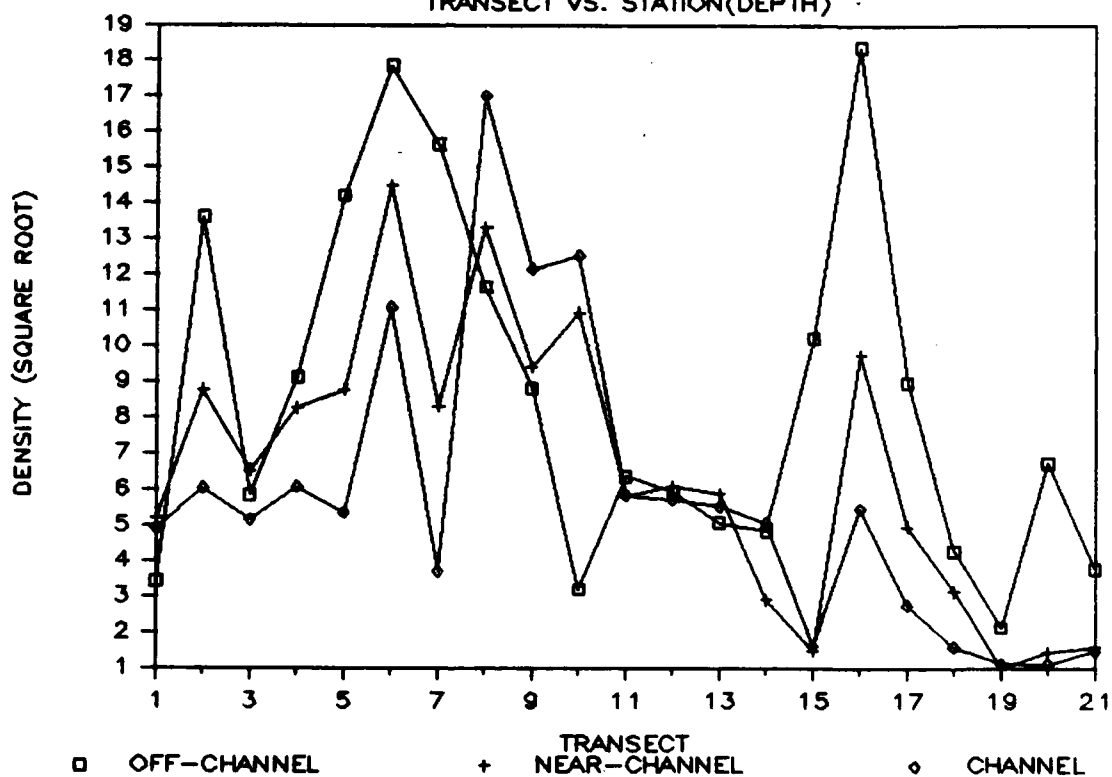


FIG. 40

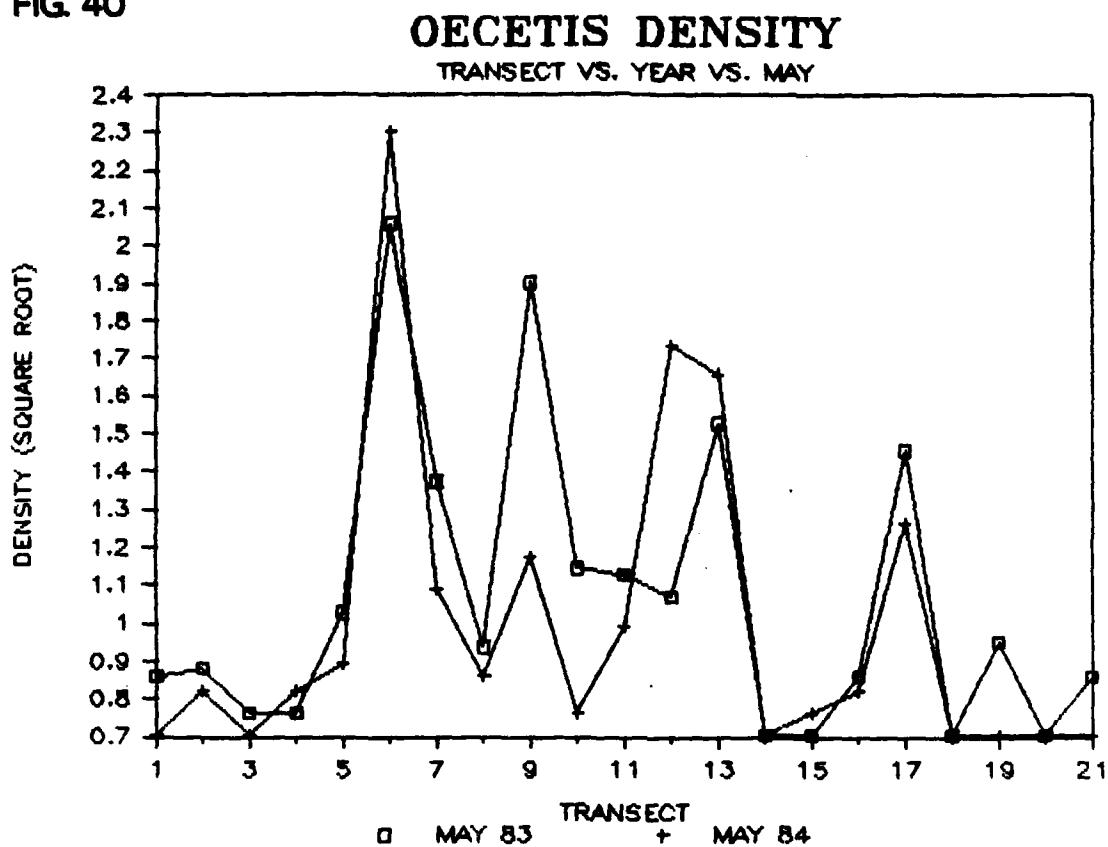


FIG. 41

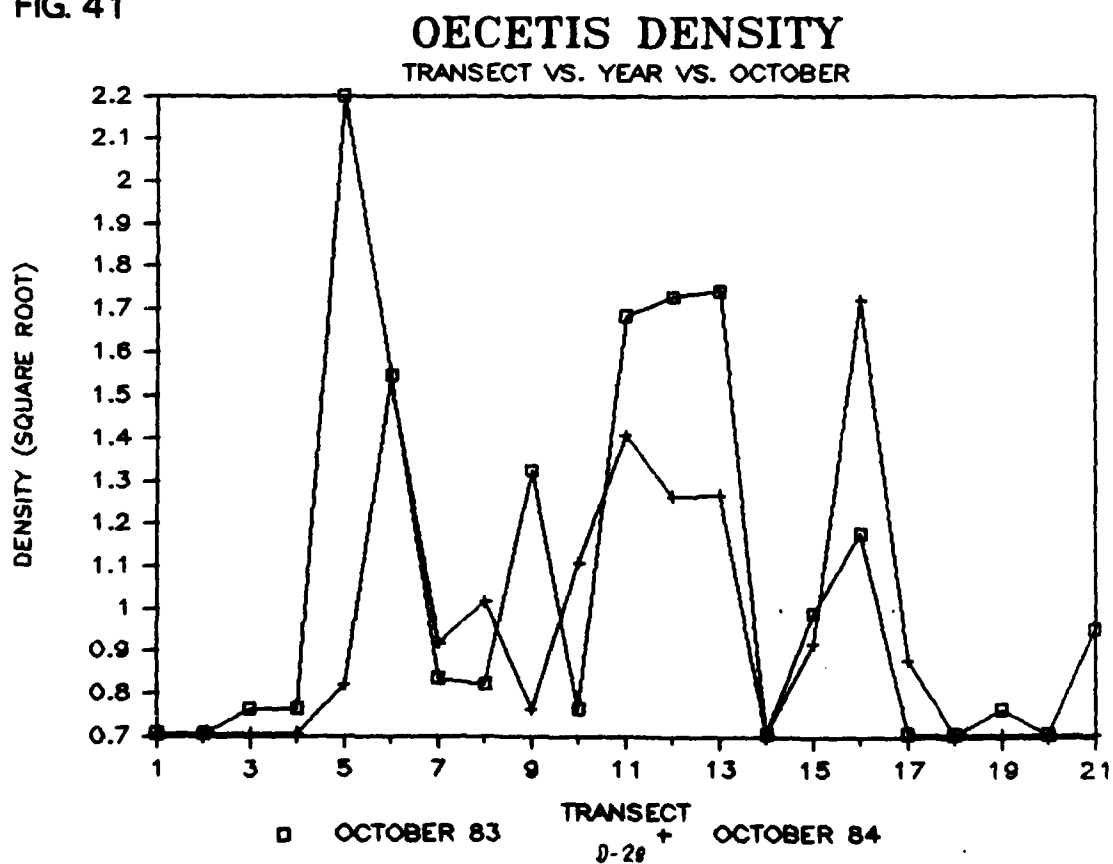


FIG 42

OECETIS DENSITY TRANSECT VS. STATION(DEPTH)

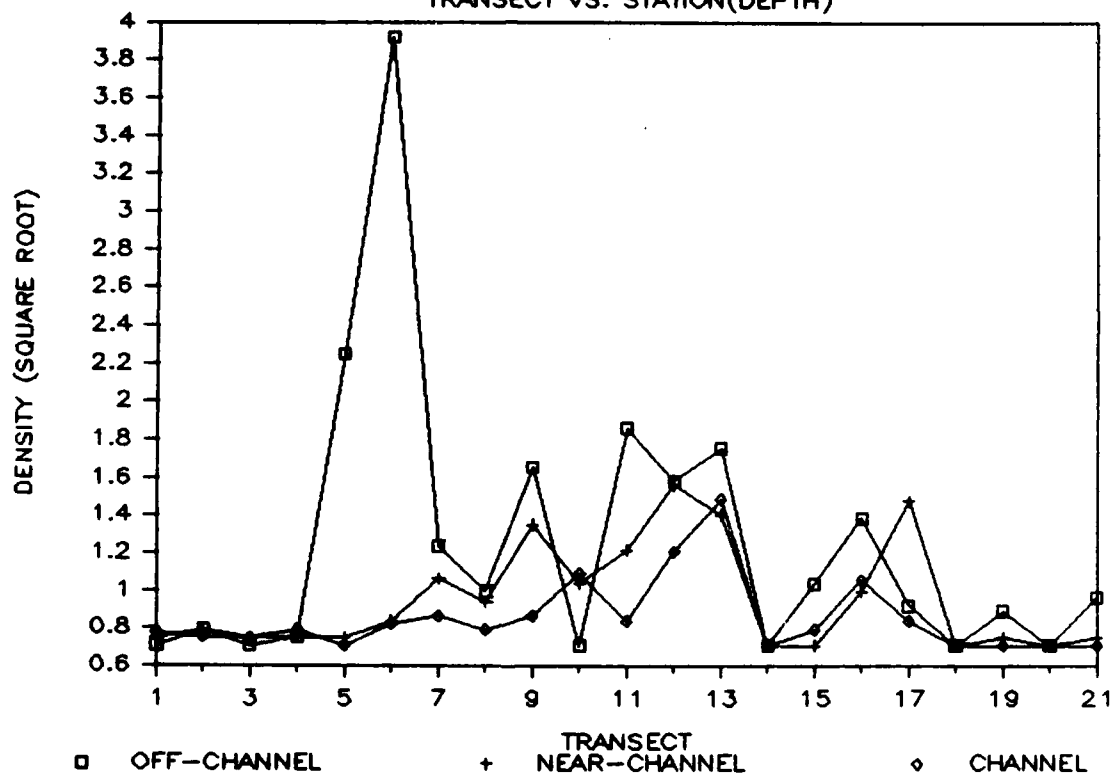


FIG. 43

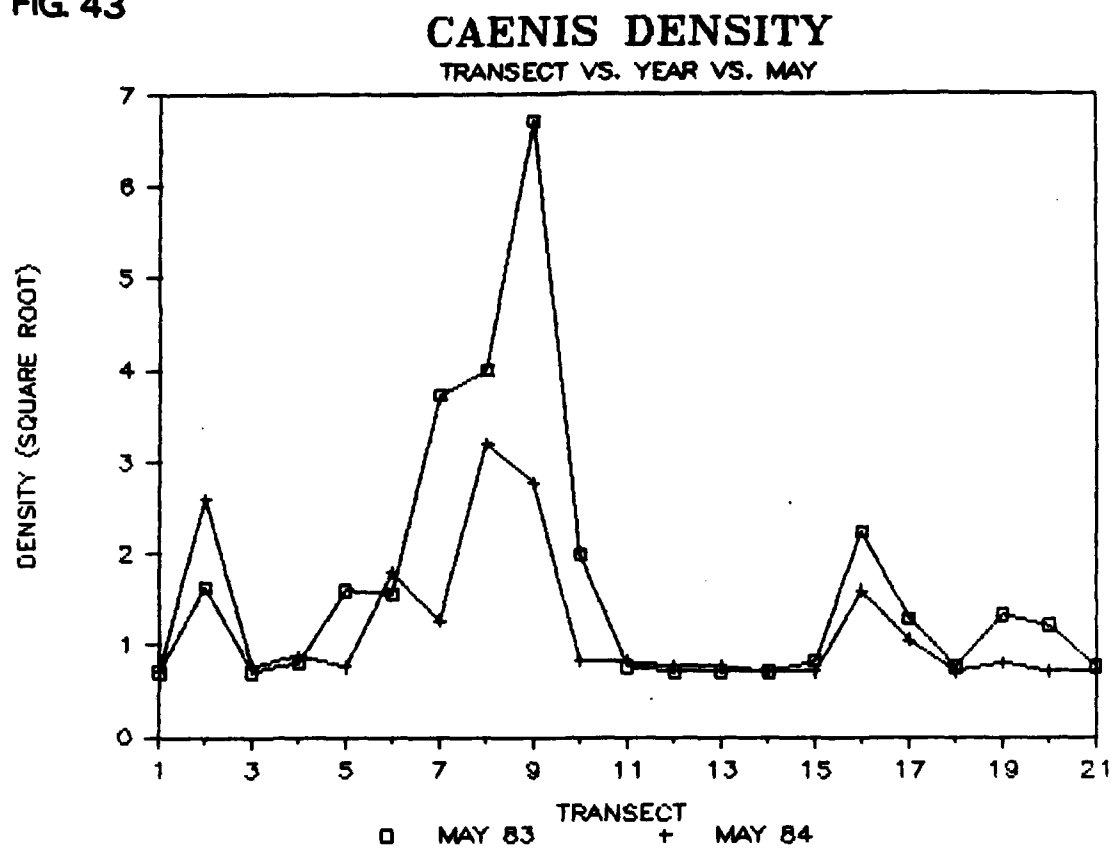


FIG. 44

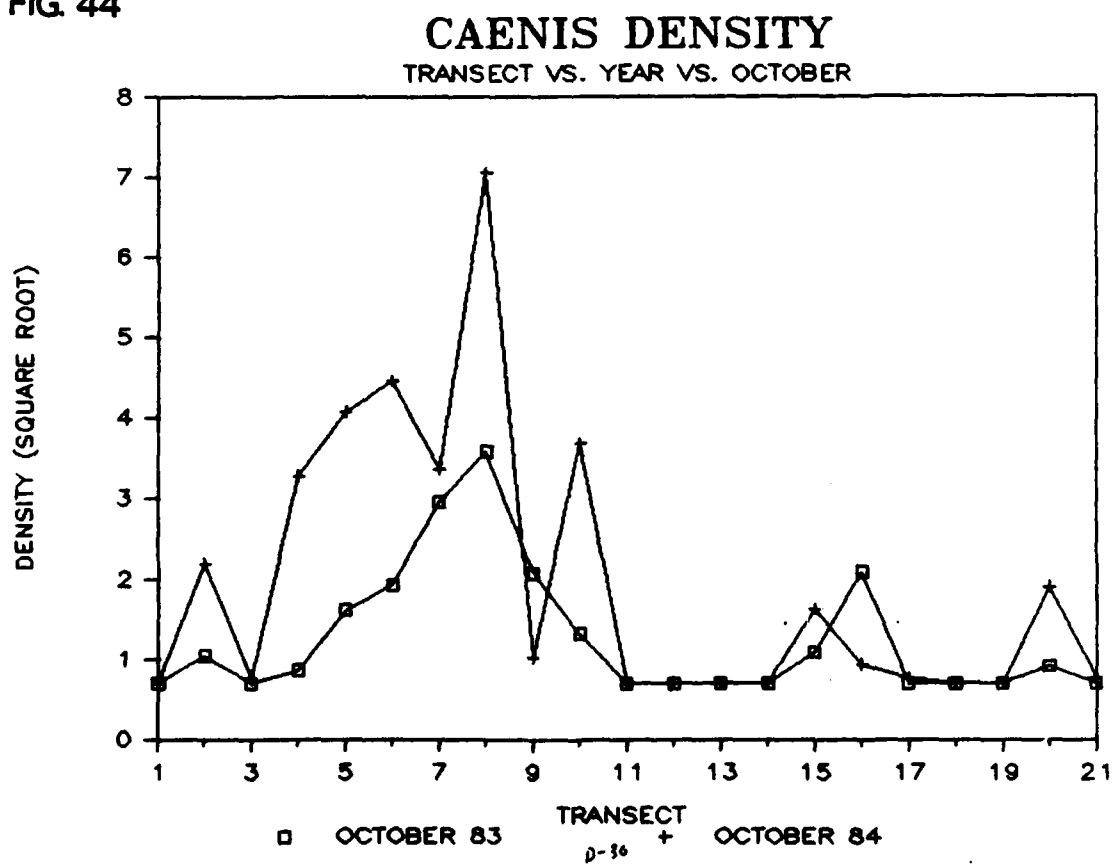


FIG. 45

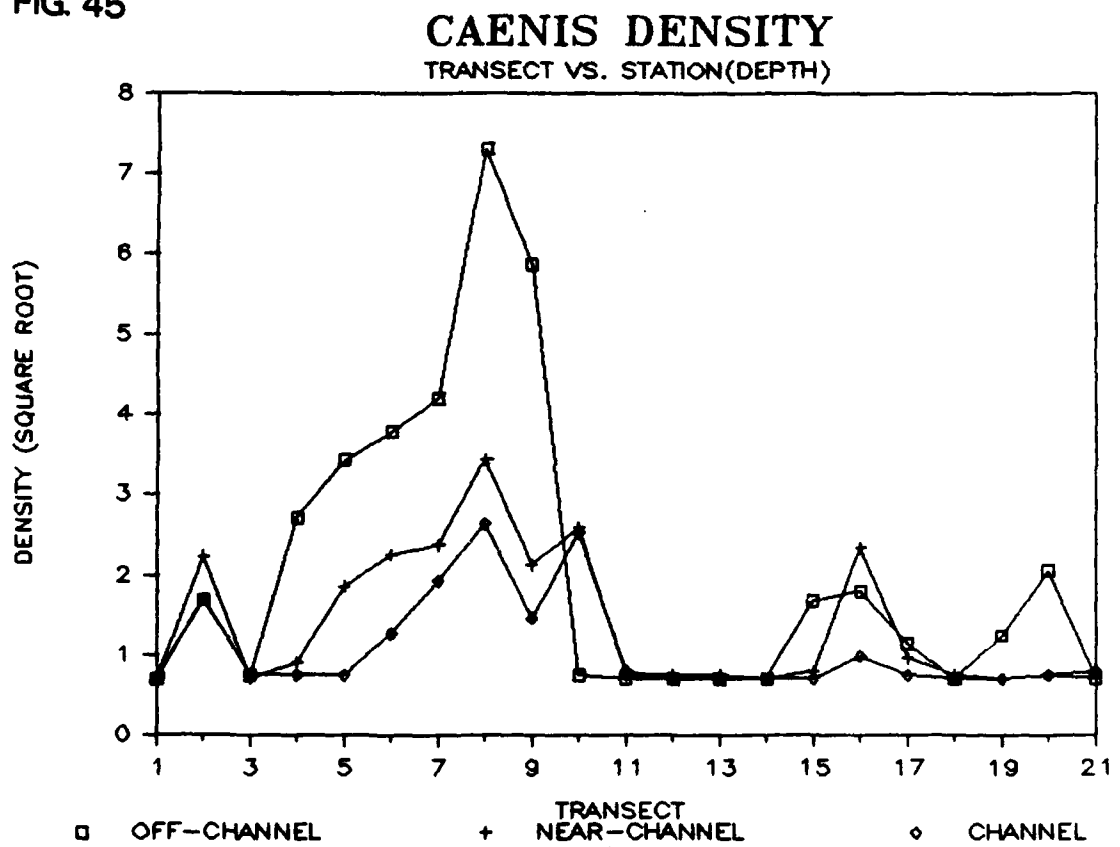


FIG. 46

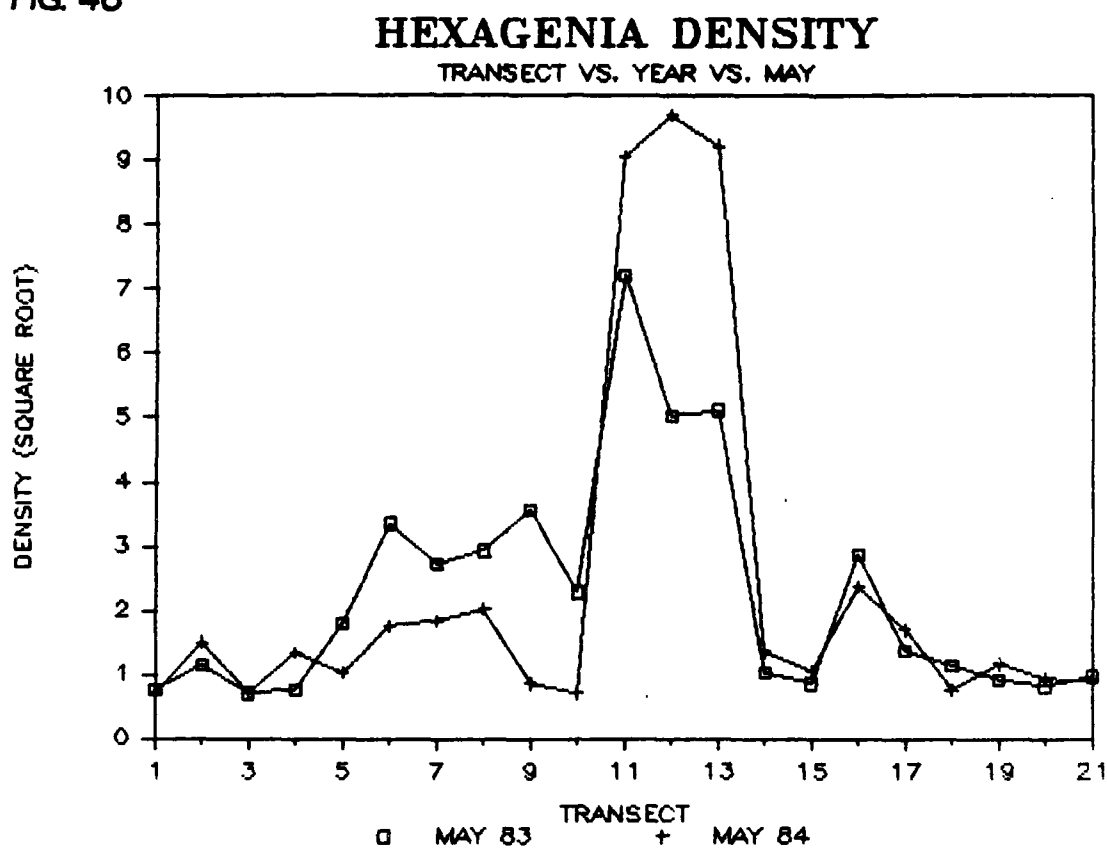


FIG. 47

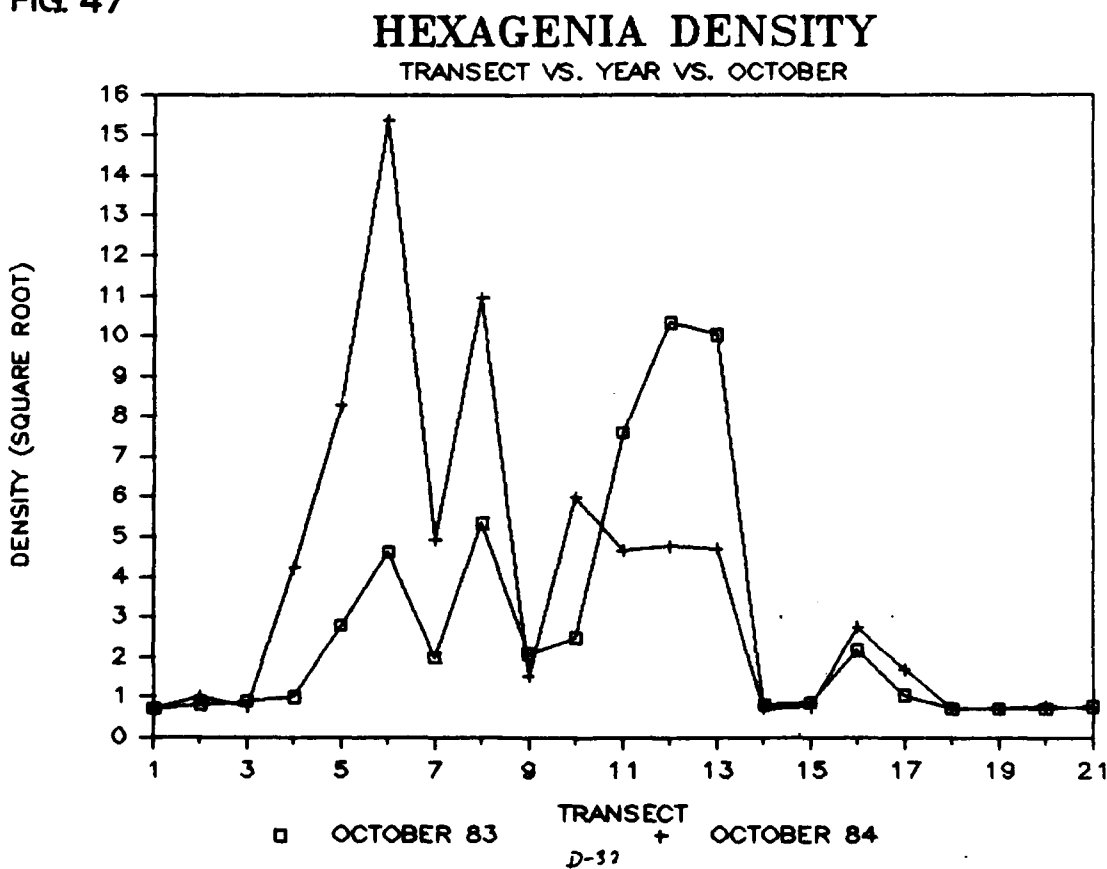


FIG. 48

HEXAGENIA DENSITY

TRANSECT VS. STATION(DEPTH)

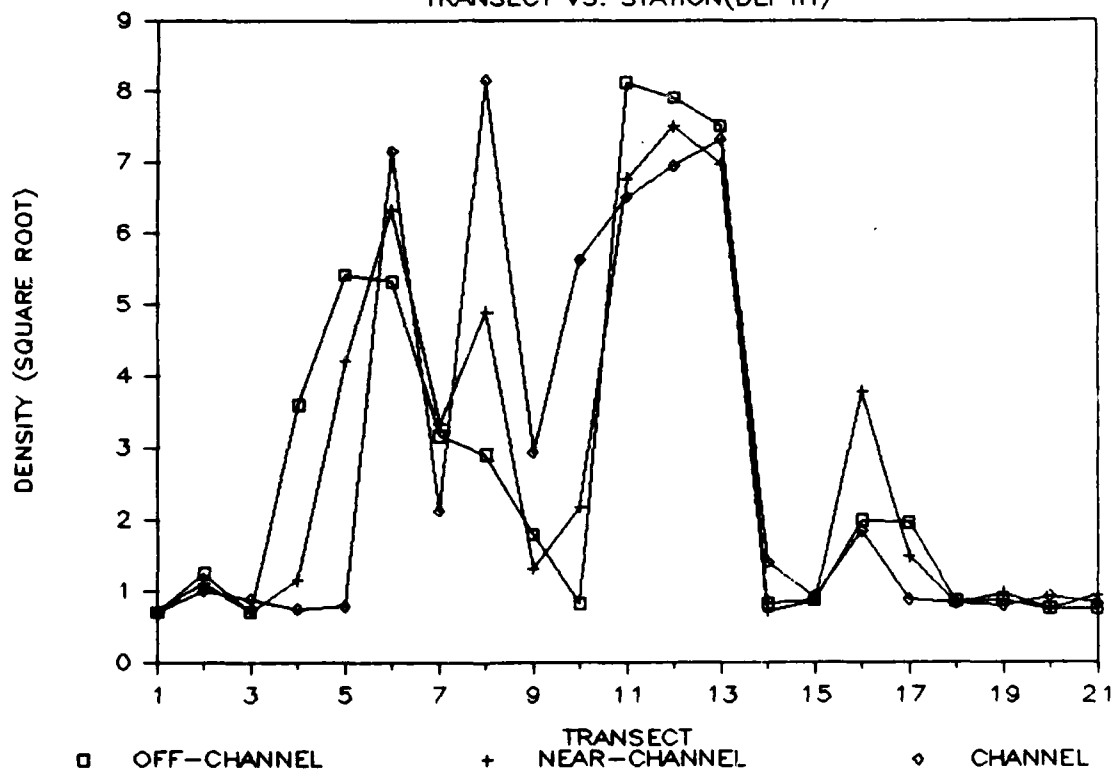


FIG. 49

CHEUMATOPSYCHE DENSITY

TRANSECT VS. YEAR VS. MAY

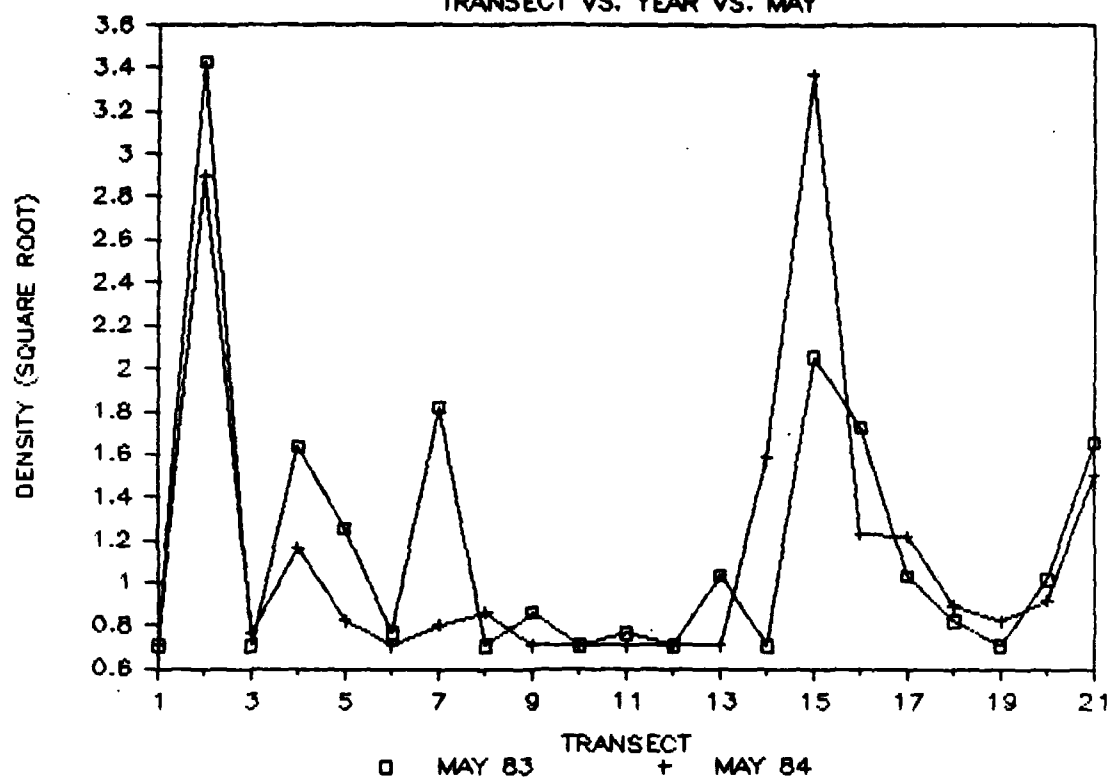


FIG. 50

CHEUMATOPSYCHE DENSITY

TRANSECT VS. YEAR VS. OCTOBER

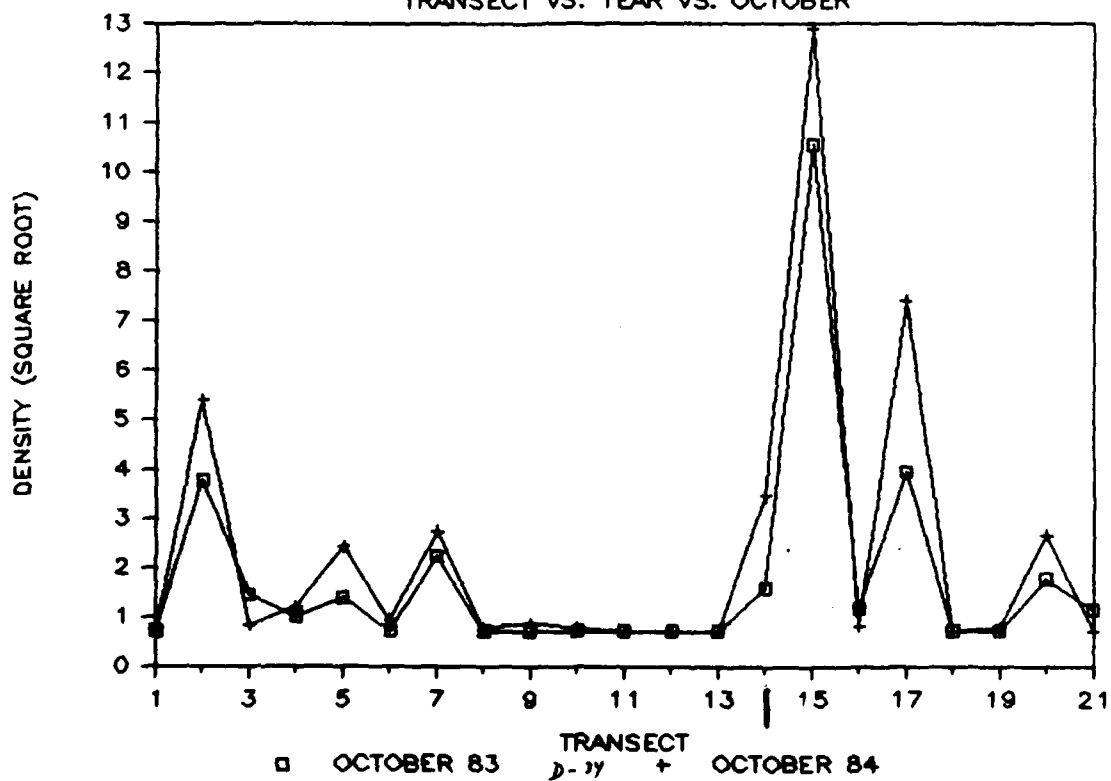


FIG. 51

CHEUMATOPSYCHE DENSITY TRANSECT VS. STATION (DEPTH)

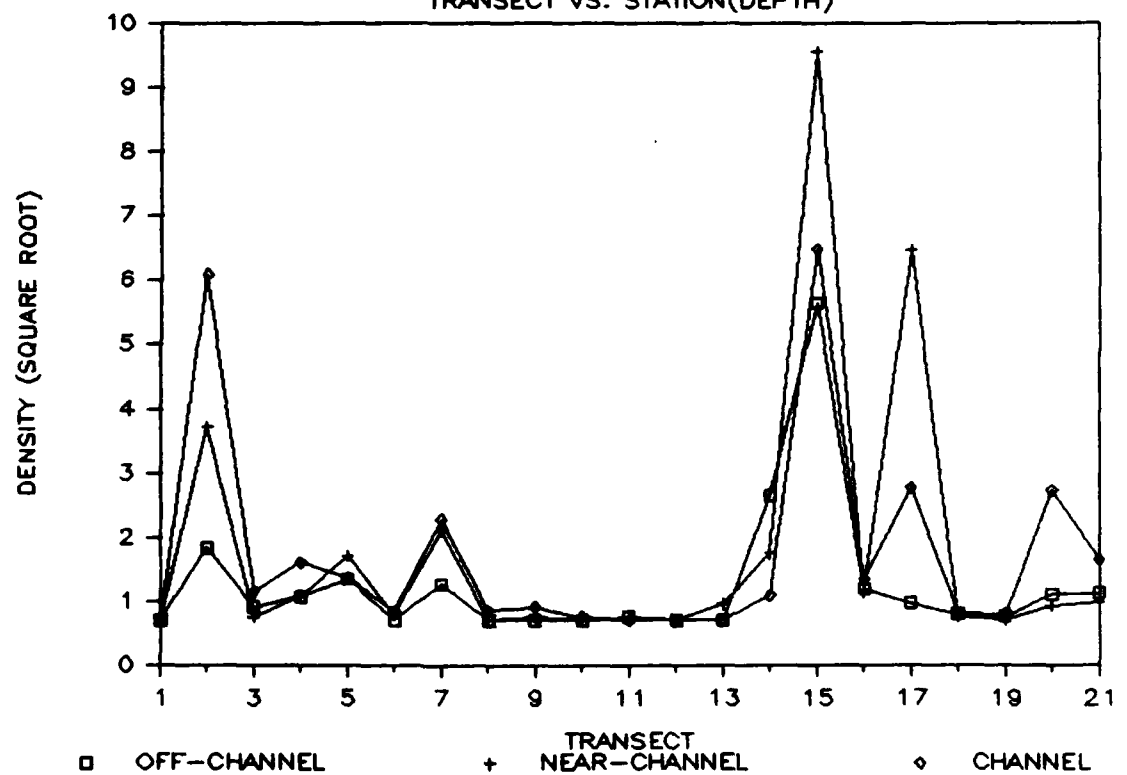


FIG. 52

HYDROPSYCHE DENSITY

TRANSECT VS. YEAR VS. MAY

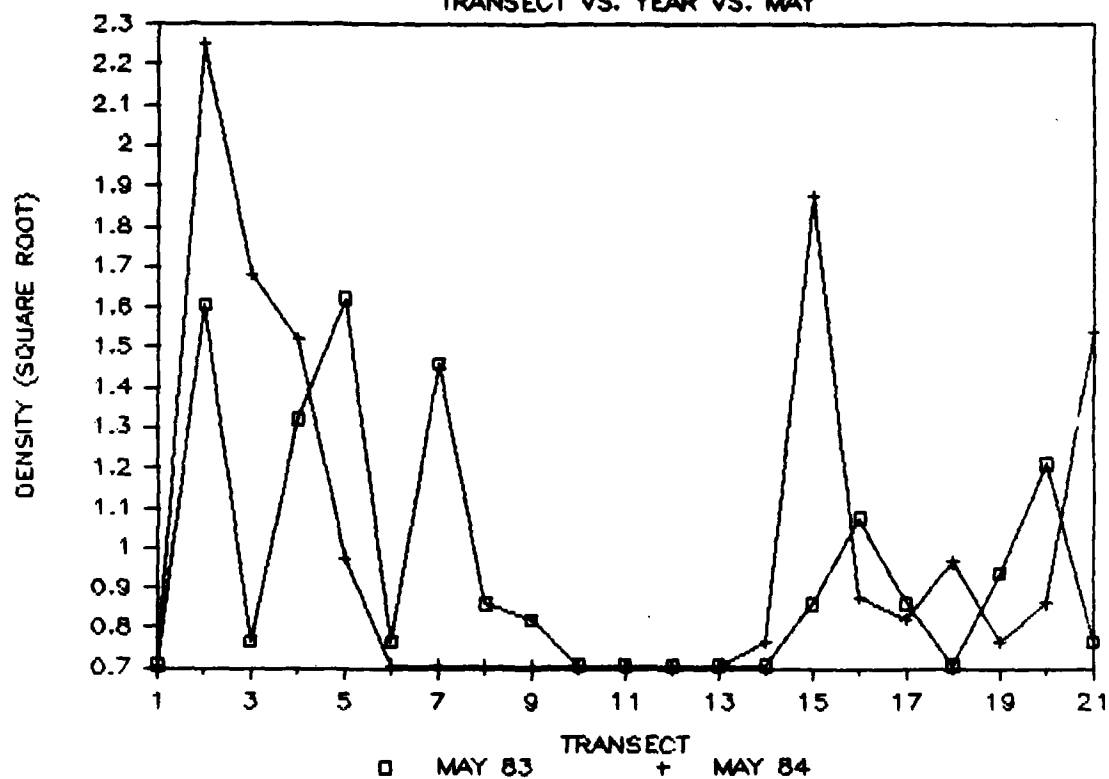


FIG. 53

HYDROPSYCHE DENSITY

TRANSECT VS. YEAR VS. OCTOBER

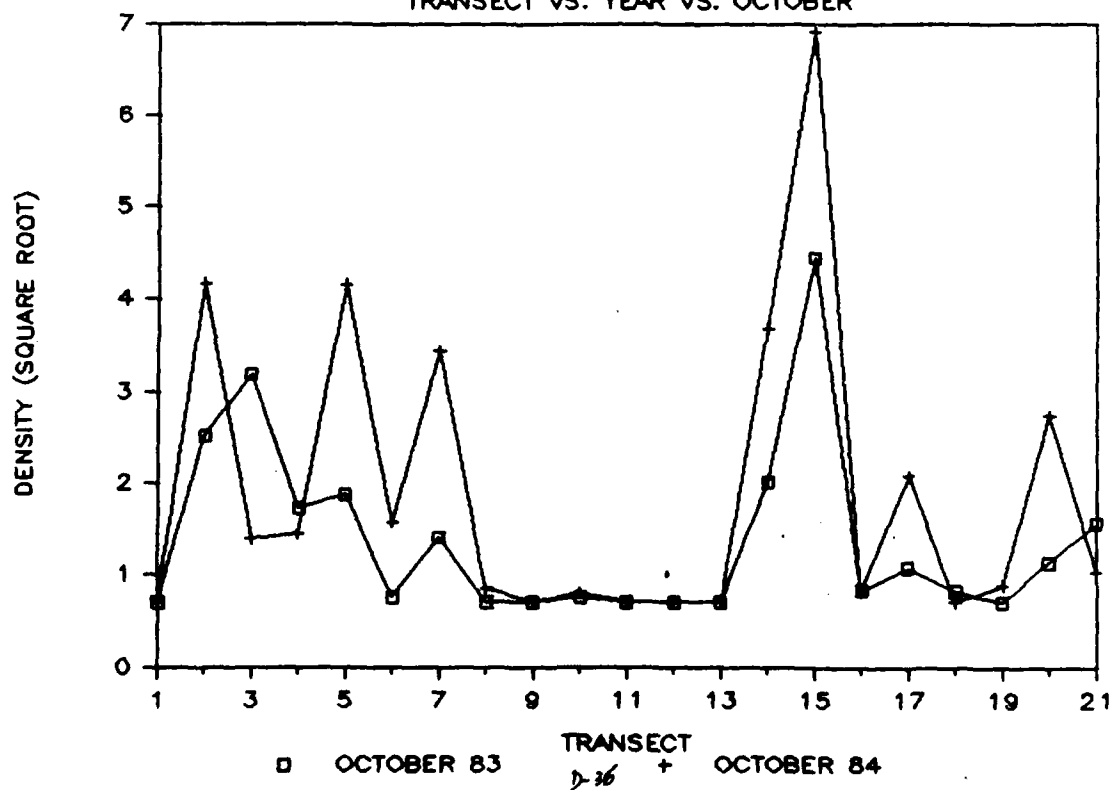


FIG. 54

HYDROPSYCHE DENSITY

TRANSECT VS. STATION (DEPTH)

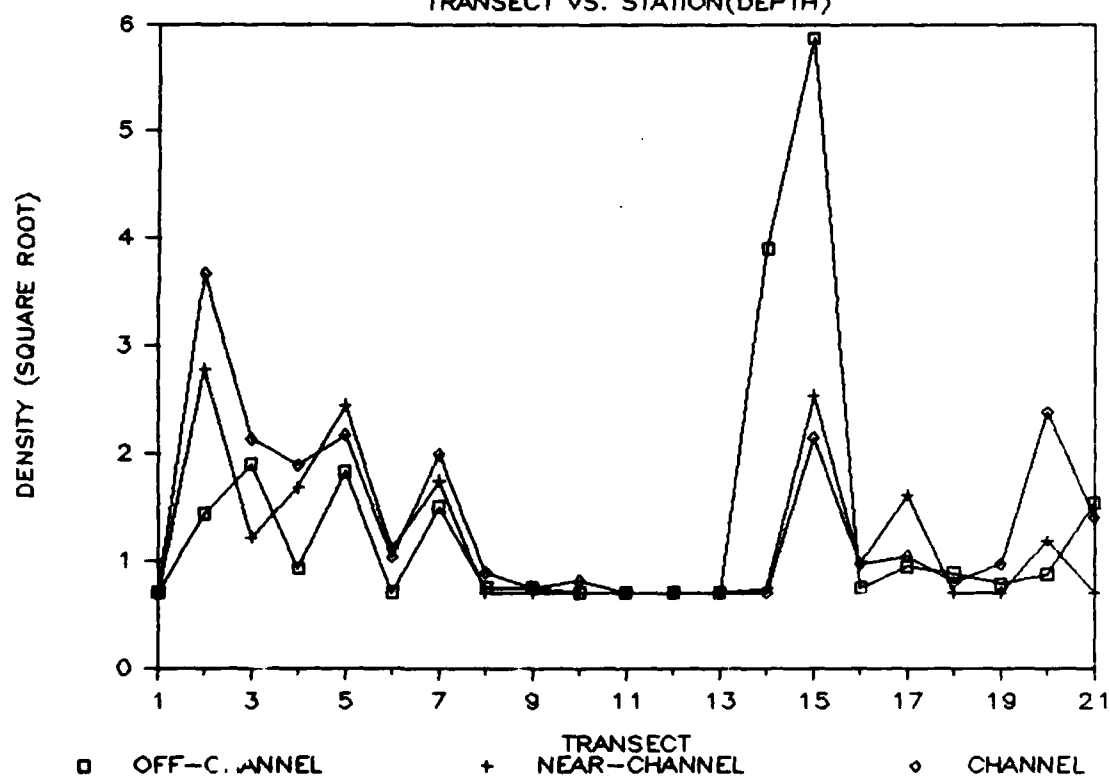


FIG. 55

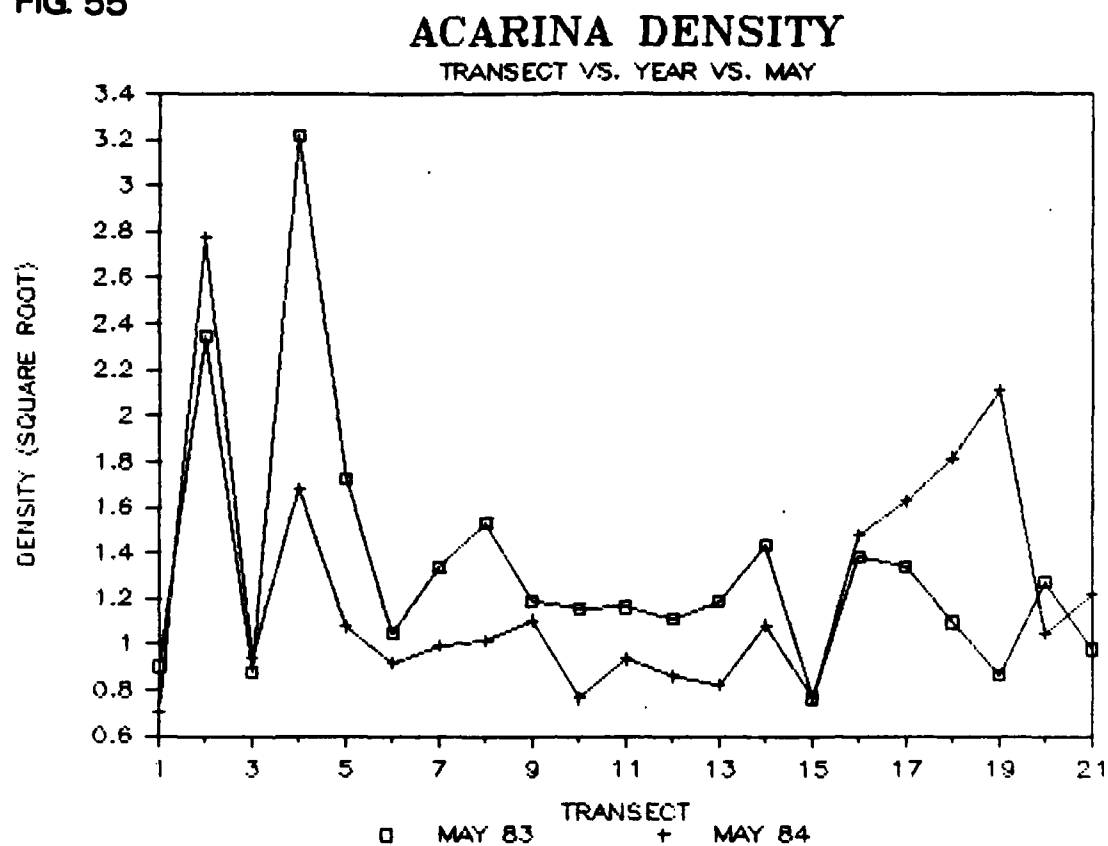


FIG. 56

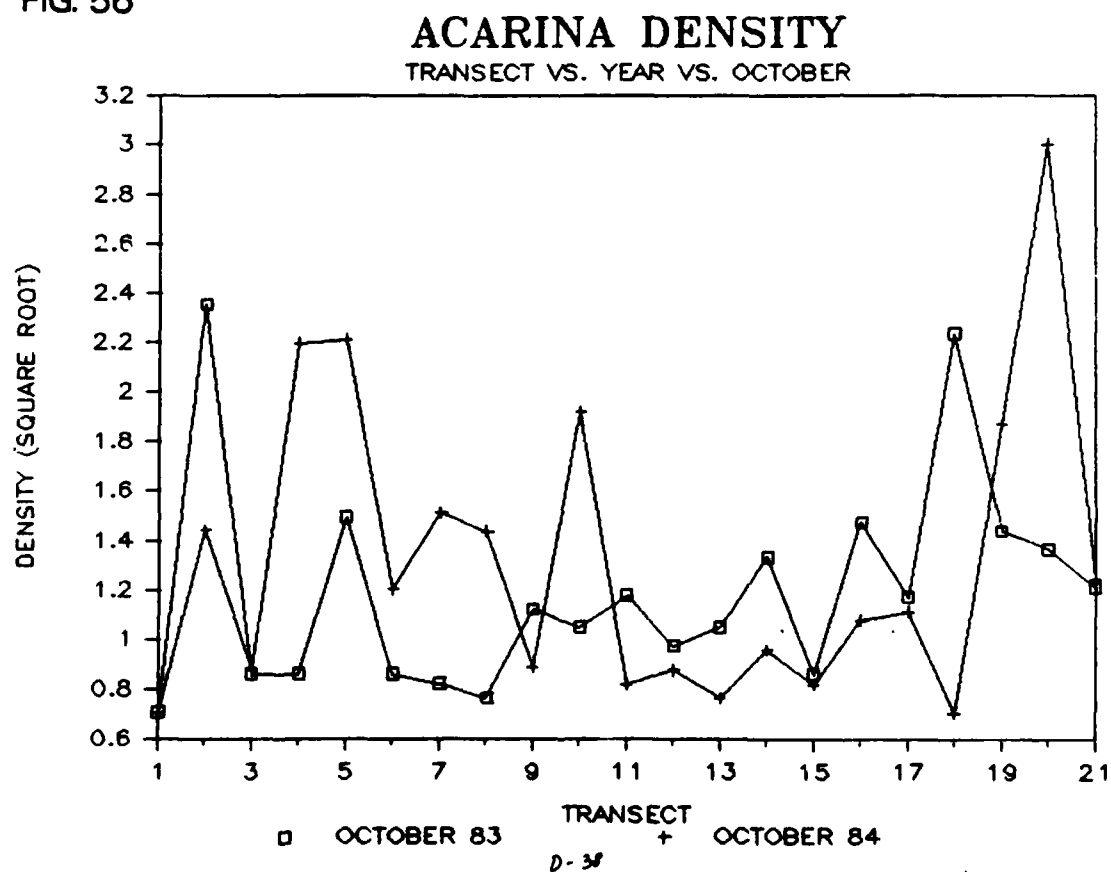


FIG. 57

ACARINA DENSITY TRANSECT VS. STATION(DEPTH)

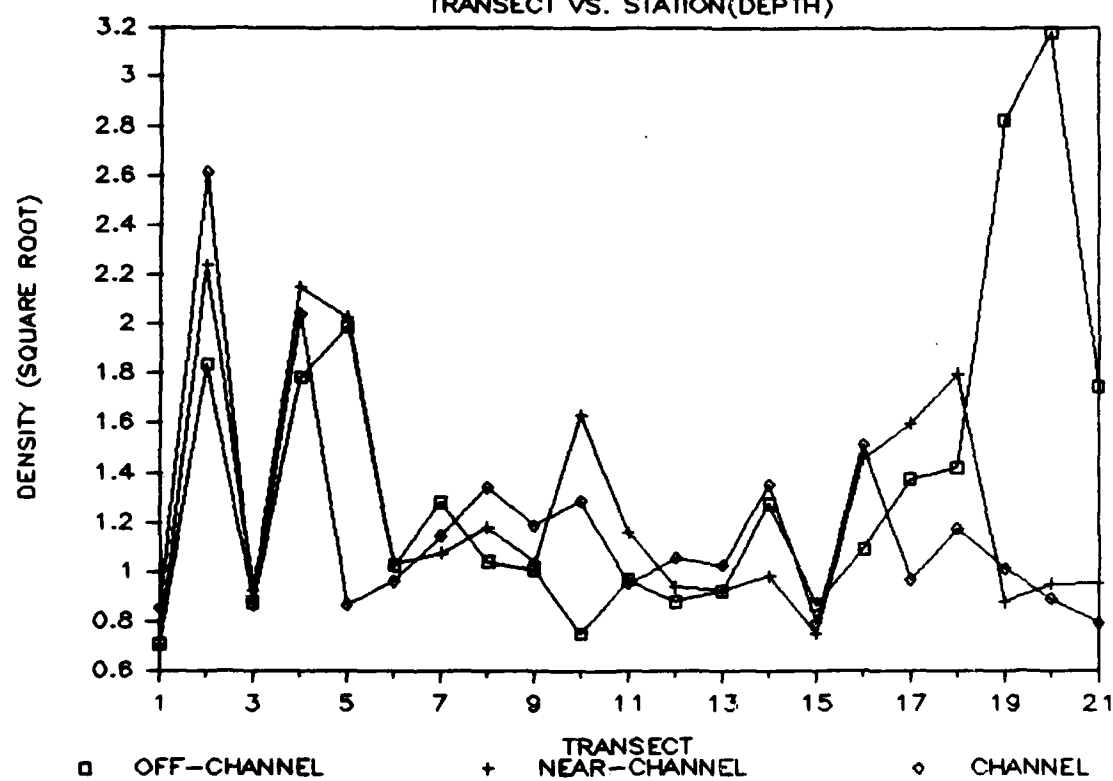


FIG. 58

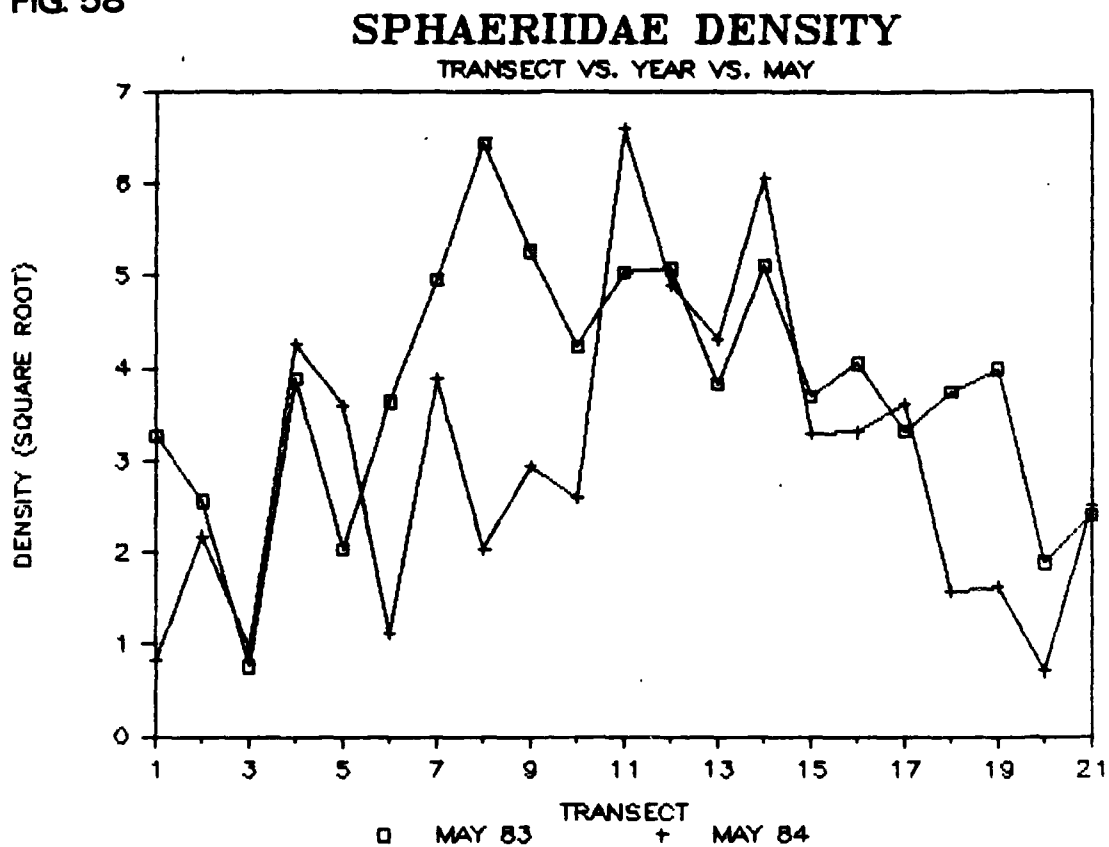


FIG. 59

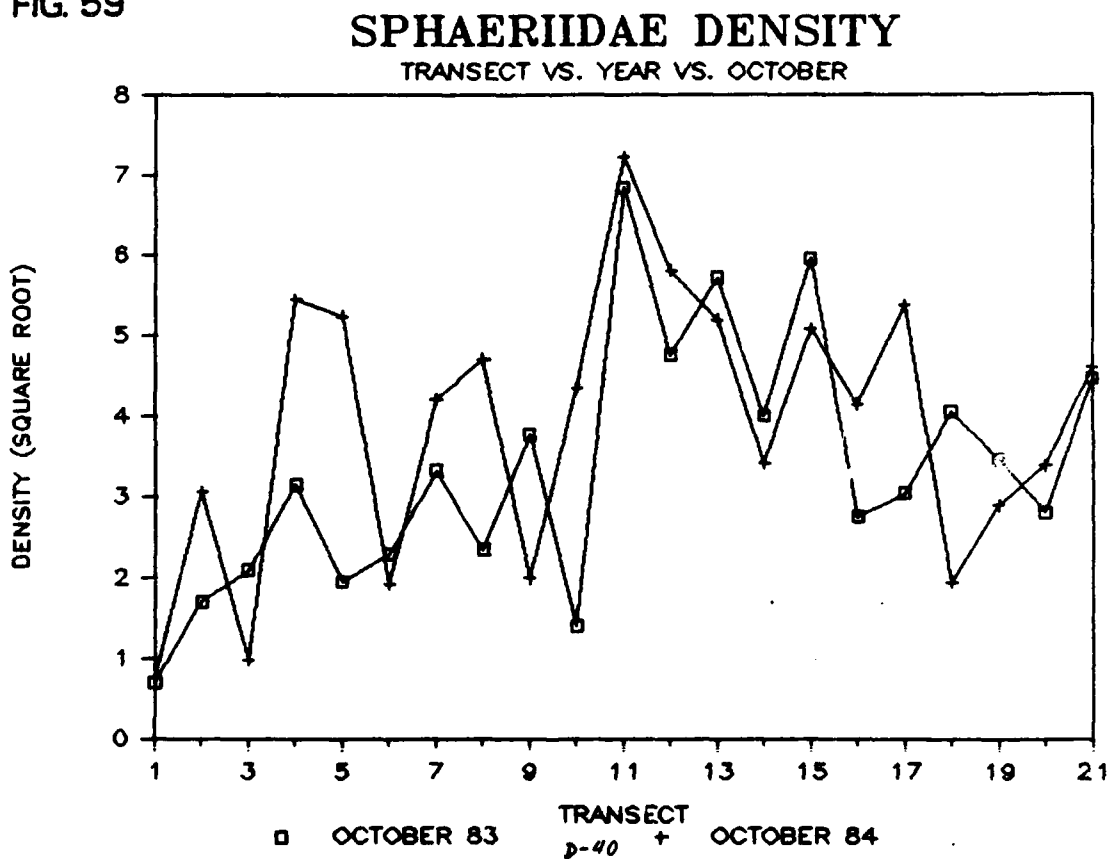


FIG. 60

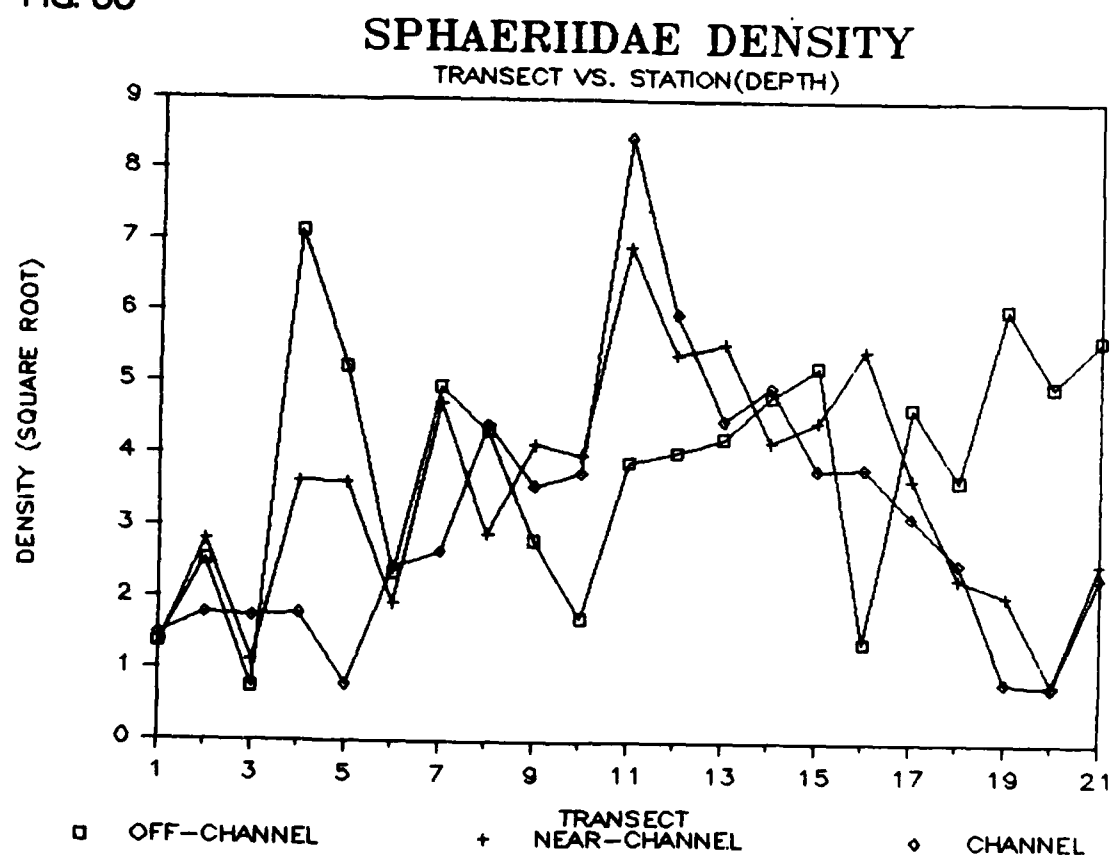


FIG. 61

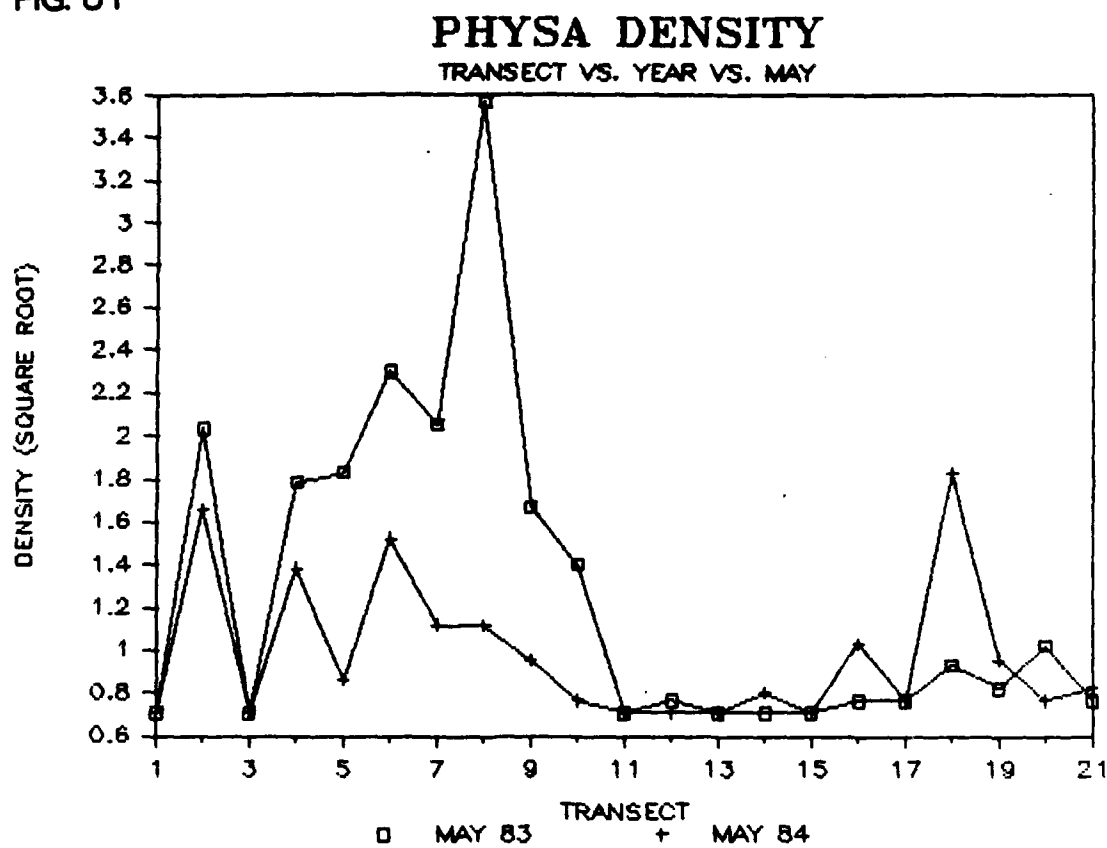


FIG. 62

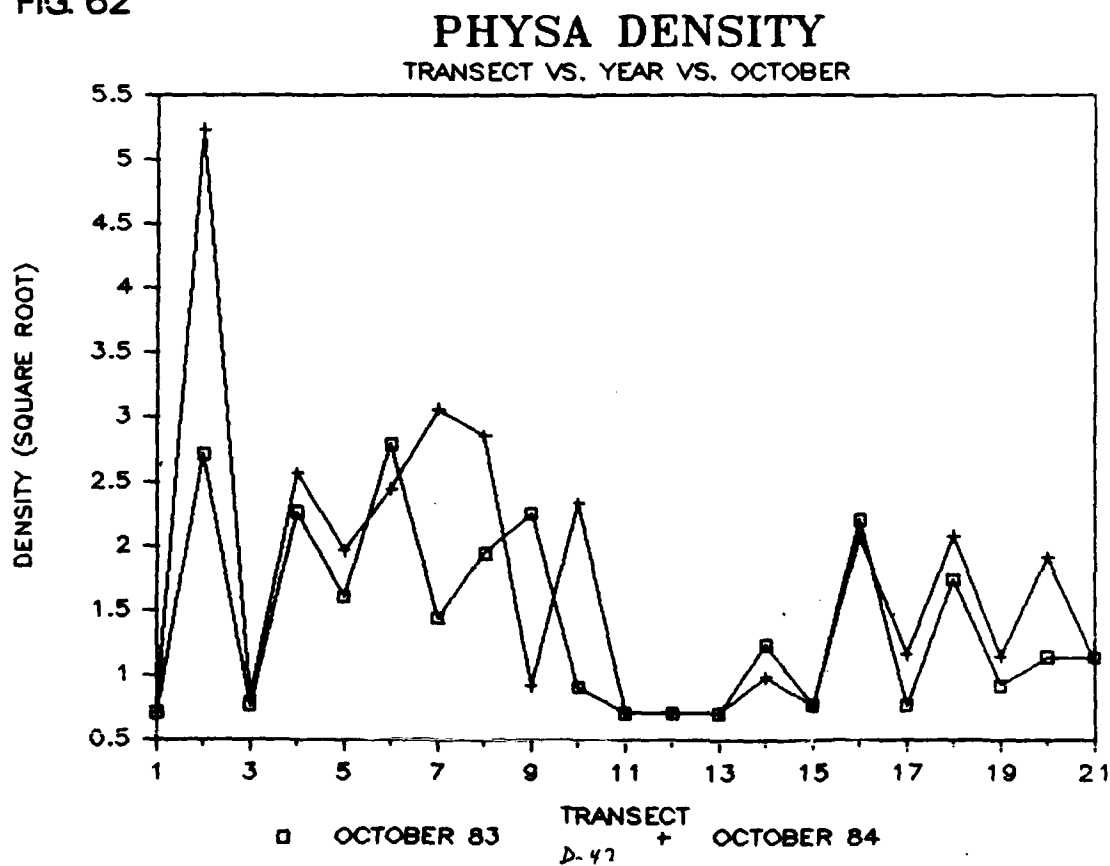


FIG. 63

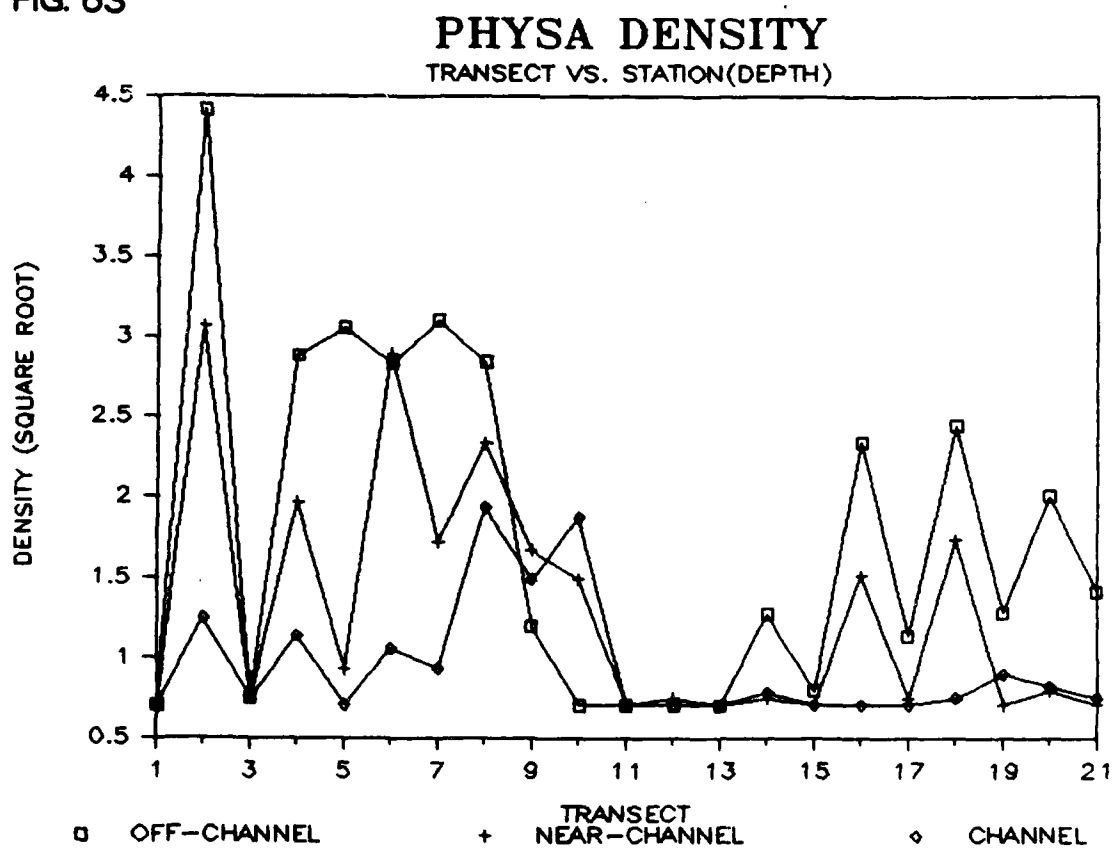


FIG. 64

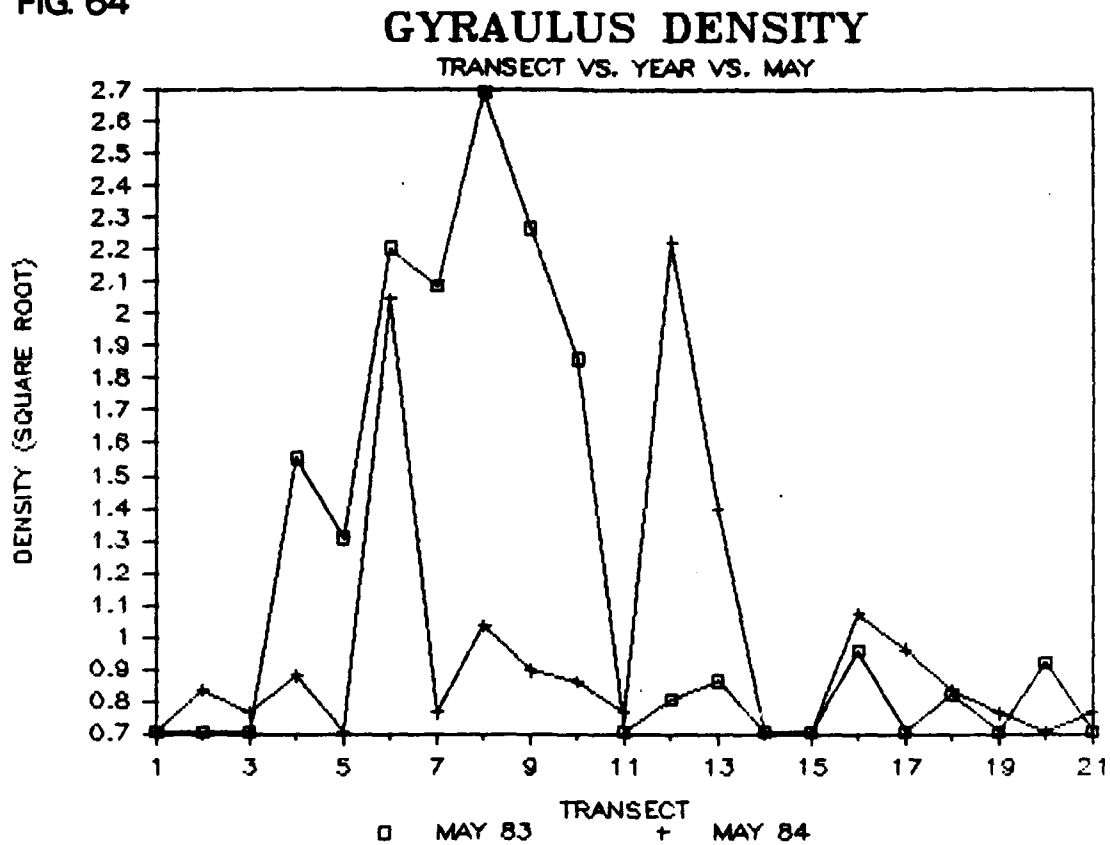


FIG. 65

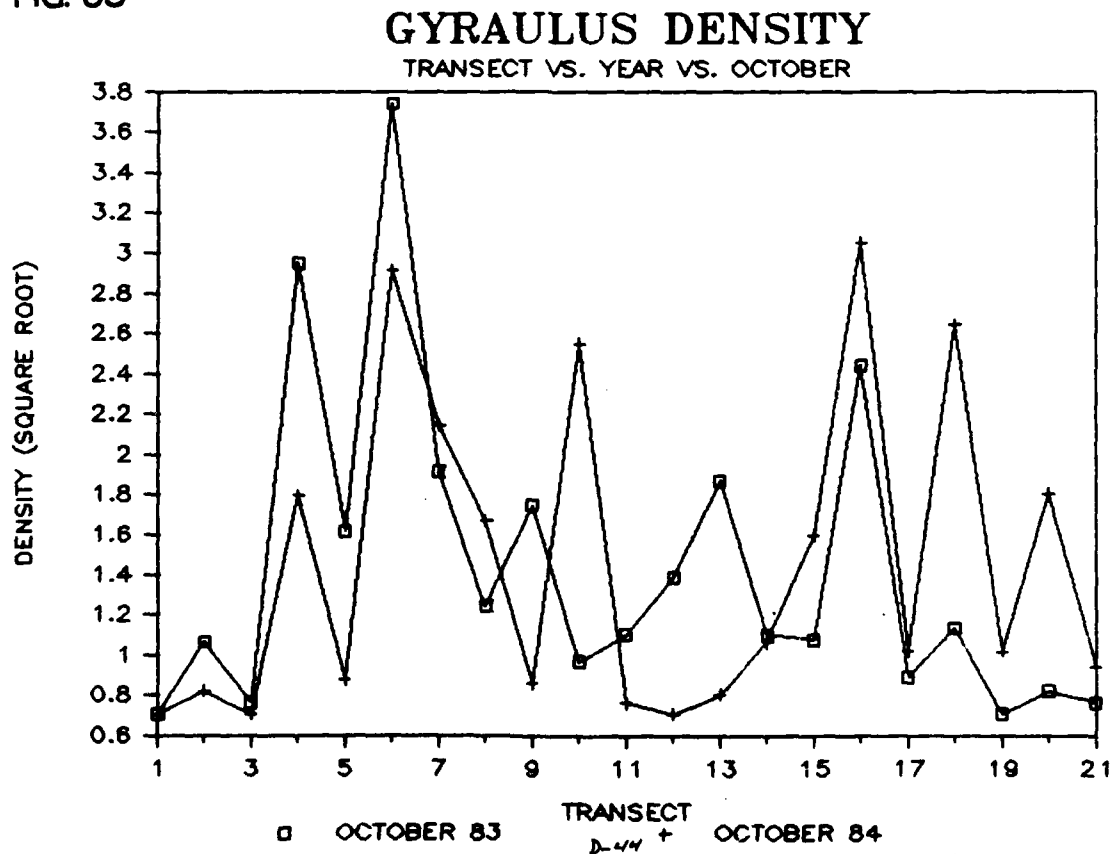


FIG. 66

GYRAULUS DENSITY TRANSECT VS. STATION (DEPTH)

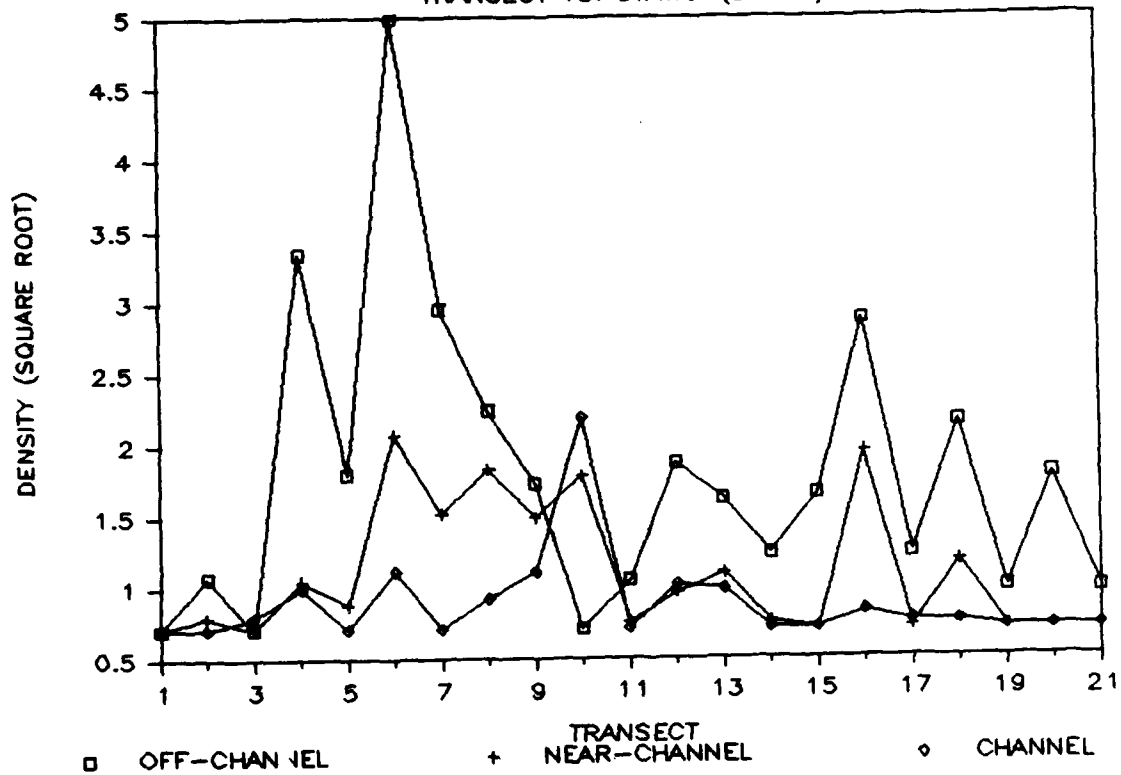


FIG. 67

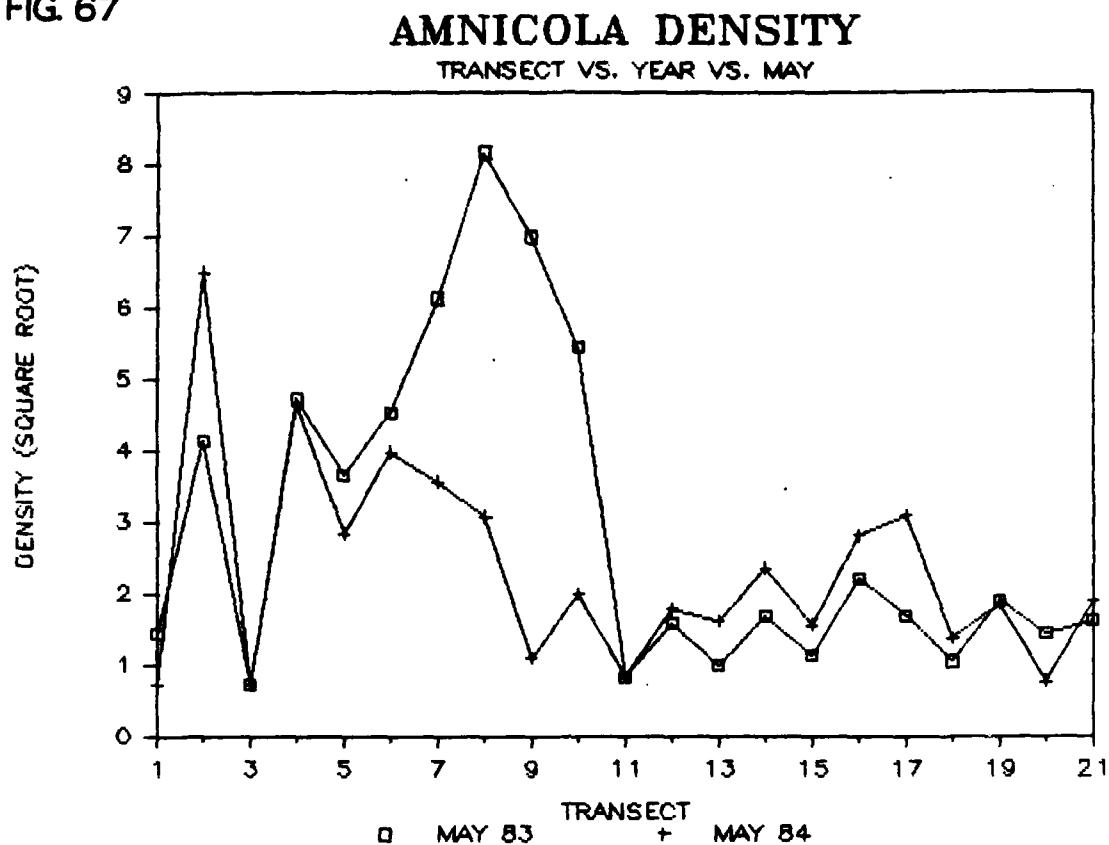


FIG. 68

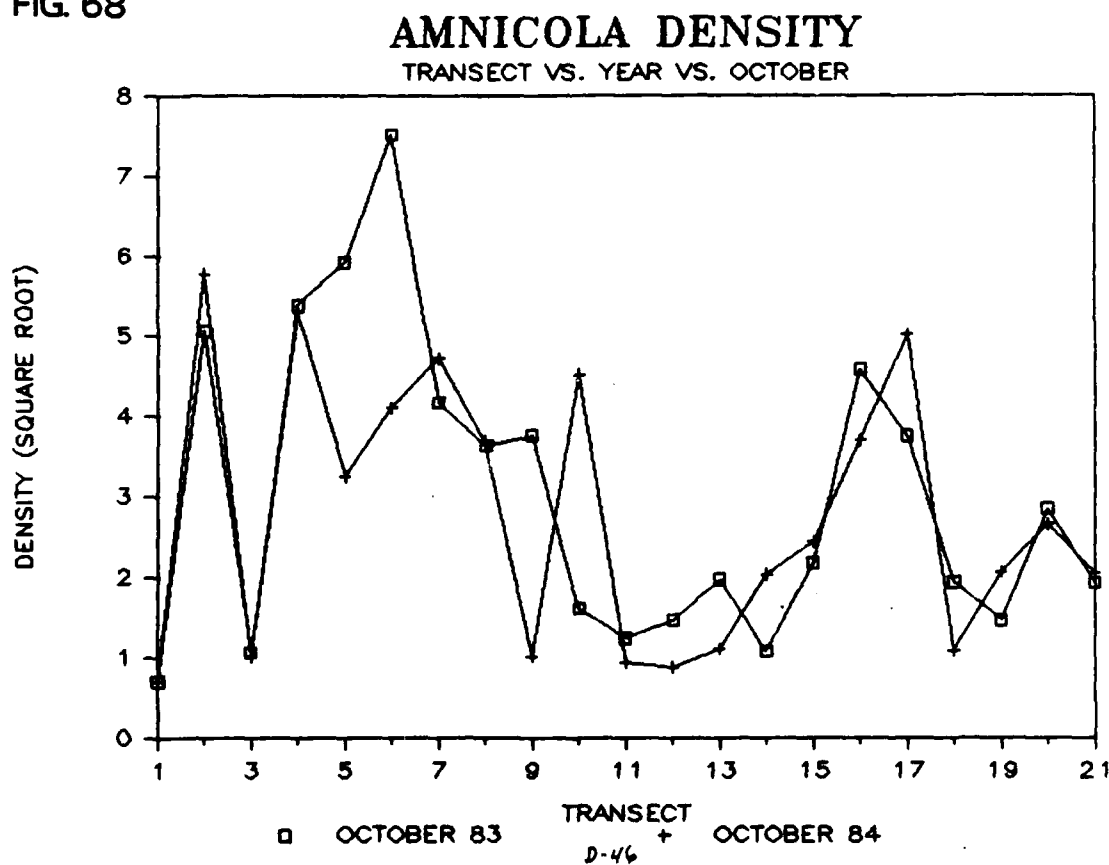


FIG. 69

AMNICOLA DENSITY

TRANSECT VS. STATION (DEPTH)

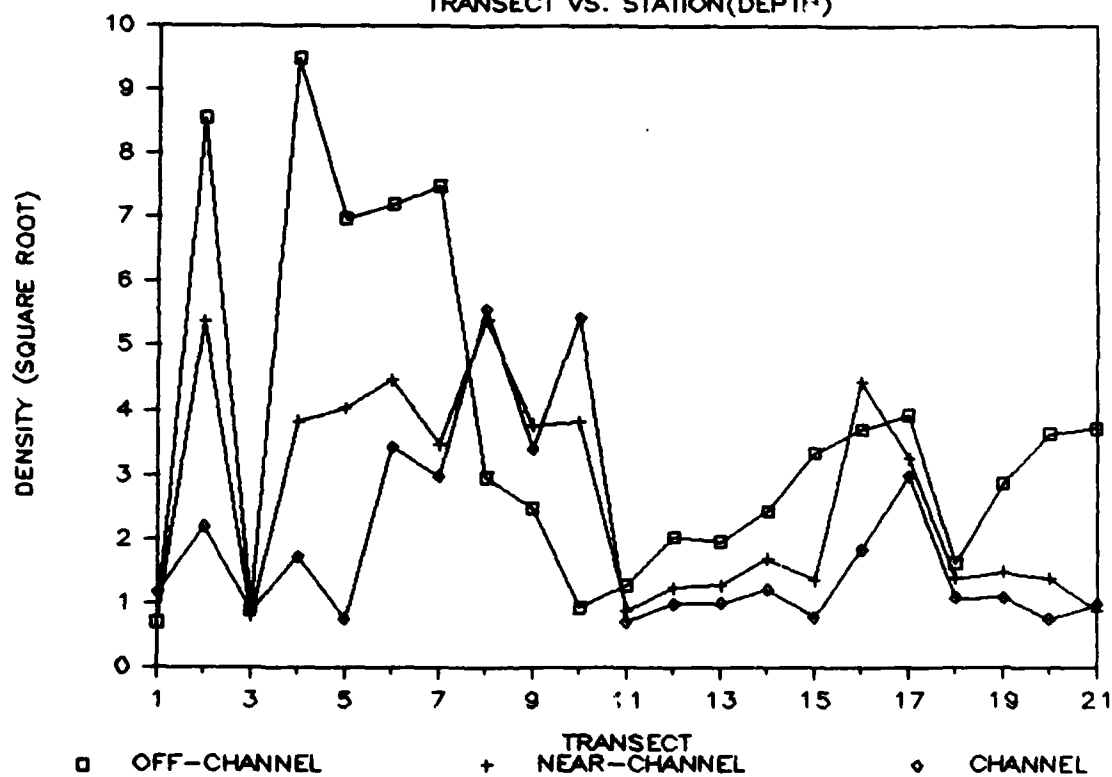


FIG. 70

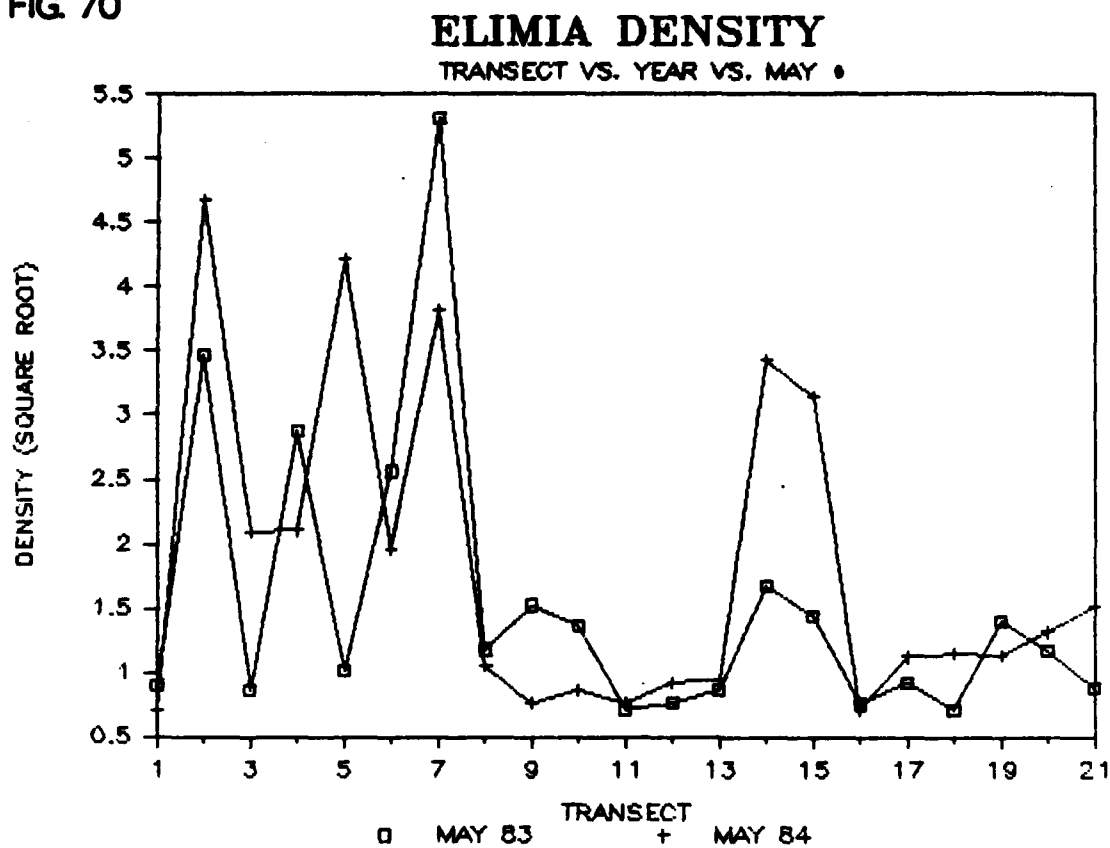


FIG. 71

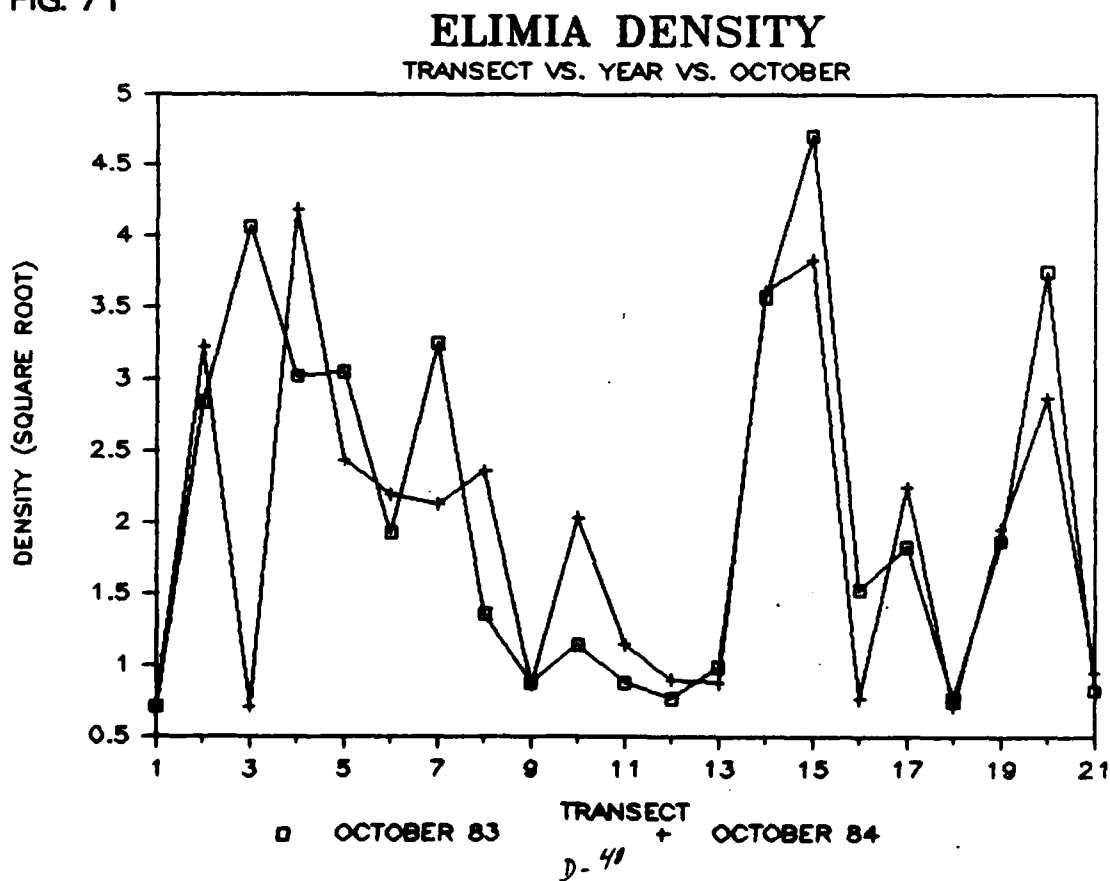


FIG. 72

ELIMIA DENSITY TRANSECT VS. STATION(DEPTH)

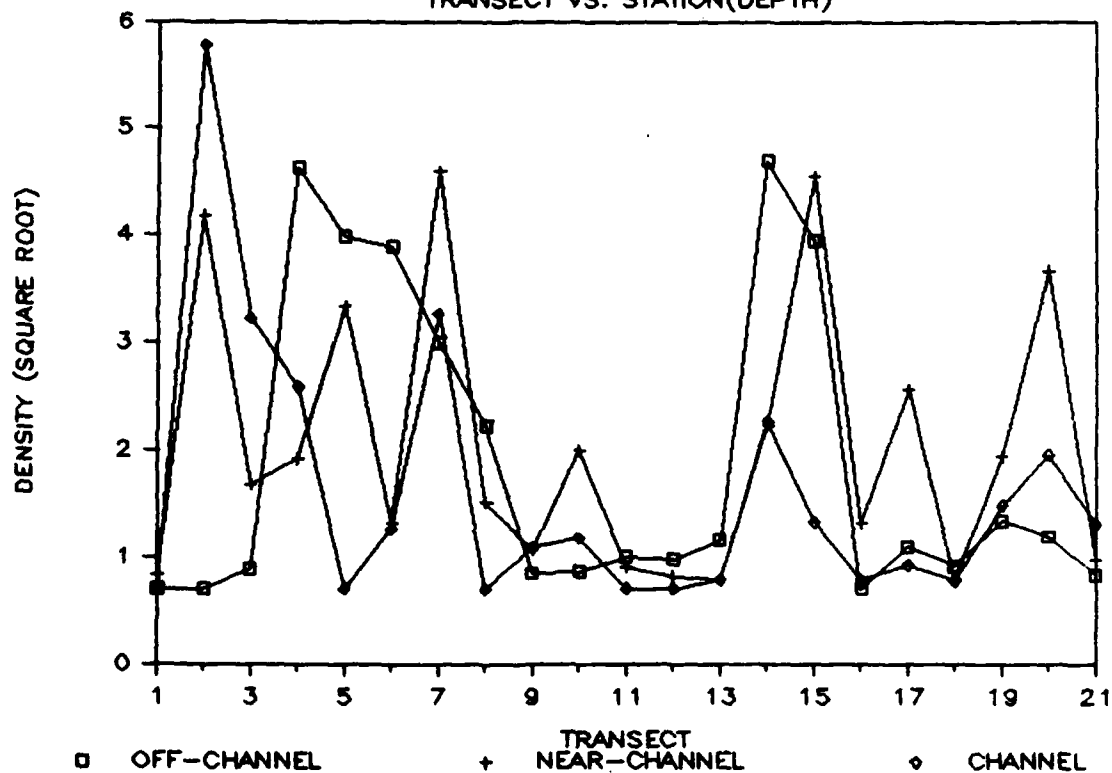


FIG. 73

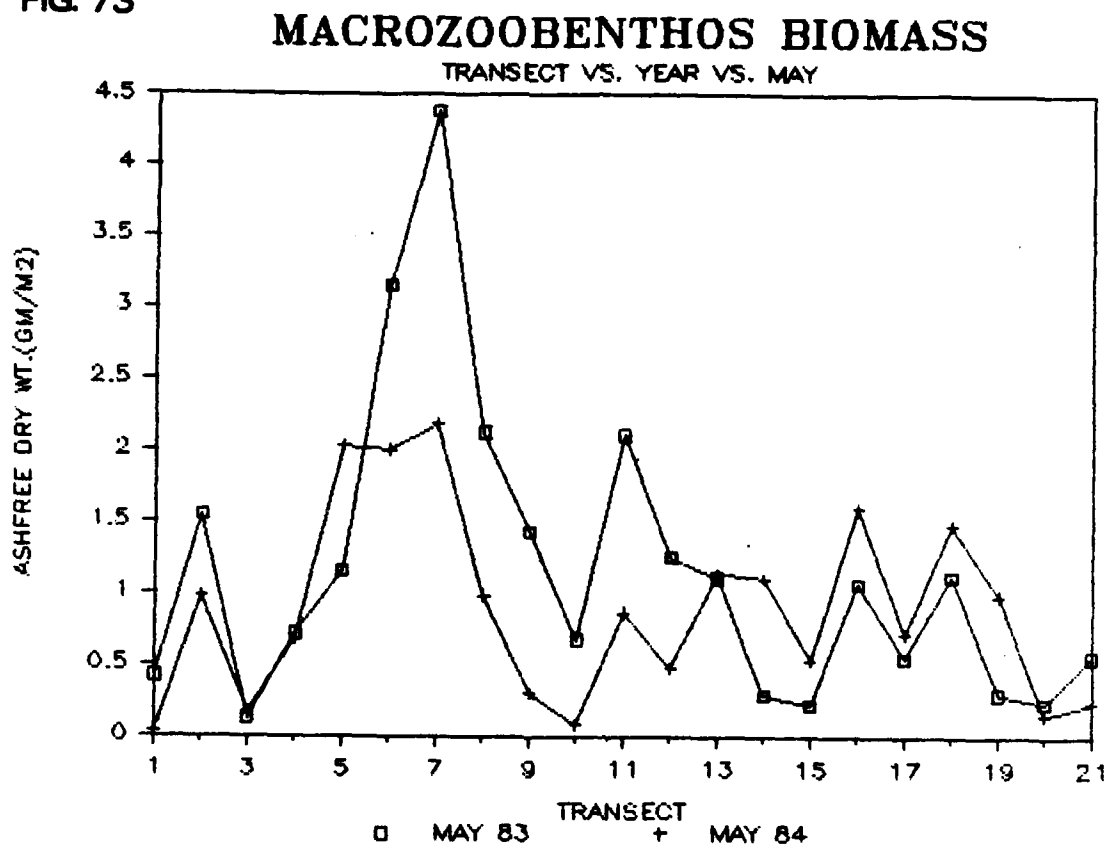


FIG. 74

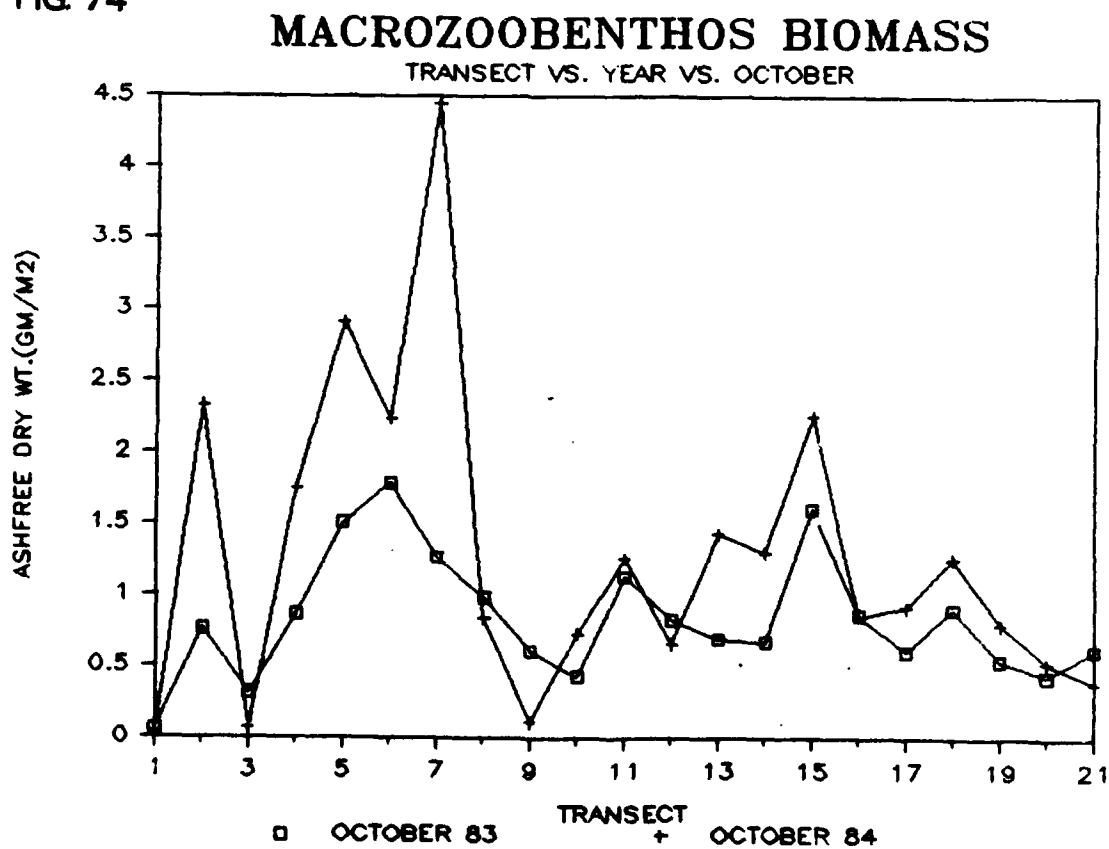
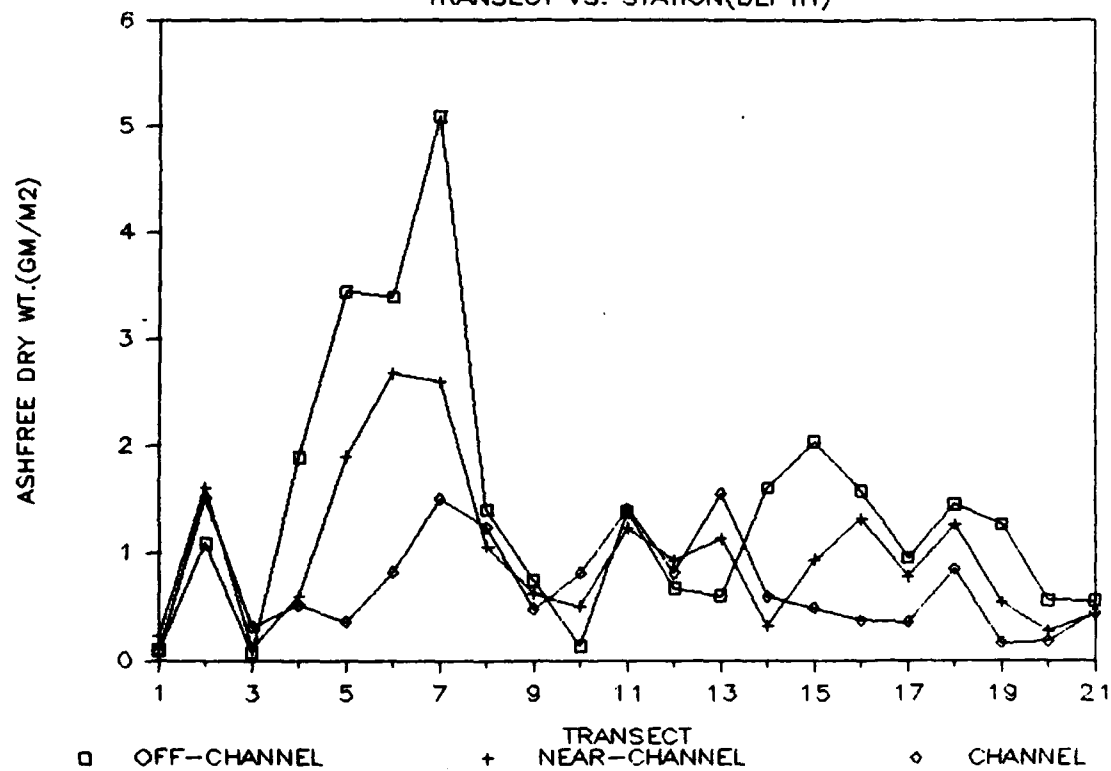


FIG. 75

MACROZOOBENTHOS BIOMASS

TRANSECT VS. STATION (DEPTH)



APPENDIX E

Macrozoobenthos Ponar Grab Biomass Data

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA - 1983 MAY									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT			
			REP. 1	REP. 2	REP. 3	(G/50. METER)			
ST. CLAIR RIVER	1	1	0.0065	0.0268	0.0031	0.2507			
		2	0.0274	0.0259	0.0601	0.7809			
		3	0.0048	0.0082	0.0211	0.2348			
	2	1	0.1036	0.0553	0.0636	1.5323			
		2	0.0697	0.1408	0.0386	1.7155			
		3	0.0552	0.0646	0.0818	1.3884			
	3	1	0.0053	0.0083	0.0101	0.1632			
		2	0.0115	0.0033	0.0093	0.1660			
		3	0.0020	0.0023	0.0010	0.0365			
	4	1	0.0335	0.1174	0.0533	1.4063			
		2	0.0250	0.0317	0.0130	0.4800			
		3	0.0113	0.0091	0.0170	0.2576			
	5	1	0.1672	0.0876	0.0901	2.3752			
		2	0.0004	0.0088	0.0244	0.2314			
		3	0.0006	0.0004	0.1235	0.8574			
	6	1	0.0645	0.0818	0.0344	1.2444			
		2	0.2199	0.1451	0.7318	7.5533			
		3	0.0663	0.0079	0.0205	0.6522			
	7	1	0.3510	0.2050	0.6299	8.1669			
		2	0.2840	0.2232	0.1609	4.6010			
		3	0.0270	0.0104	0.0150	0.3609			
	8	1	0.1889	0.1719	0.0237	2.6478			
		2	0.0408	0.0848	0.1248	1.7244			
		3	0.1231	0.0570	0.1117	2.0096			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 MAY						
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
			REP. 1	REP. 2	REP. 3	
ST. CLAIR RIVER	9	1	0.0718	0.1365	0.0967	2.1004
		2	0.0915	0.0345	0.0871	1.4675
		3	0.0423	0.0239	0.0363	0.7059
	10	1	0.0034	0.0041	0.0206	0.1935
		2	0.0471	0.0291	0.0845	1.1067
		3	0.0705	0.0124	0.0222	0.7238

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 MAY									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM)			MEAN ASH FREE DRY WEIGHT			
			REP. 1	REP. 2	REP. 3	(G/SQ. METER)			
LAKE ST. CLAIR	11	1	0.0705	0.0709	0.2015	2.3614			
		2	0.0862	0.1169	0.1003	2.0894			
		3	0.1002	0.0563	0.1166	1.8807			
	12	1	0.0478	0.0828	0.0382	1.1625			
		2	0.0611	0.0575	0.0517	1.1728			
		3	0.0573	0.0795	0.0716	1.4352			
	13	1	0.0264	0.0448	0.0234	0.6515			
		2	0.0476	0.0586	0.0383	0.9951			
		3	0.1115	0.0352	0.0980	1.6852			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA - 1983 MAY									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT (G/SQ. METER)			
			REP. 1	REP. 2	REP. 3	1	2	3	
DETROIT RIVER	14	1	0.0140	0.0256	0.0081	0.3285			
		2	0.0054	0.0222	0.0125	0.2761			
		3	0.0176	0.0097	0.0096	0.2541			
	15	1	0.0055	0.0134	0.0237	0.2934			
		2	0.0130	0.0092	0.0054	0.1901			
		3	0.0149	0.0063	0.0058	0.1859			
	16	1	0.0659	0.0918	0.0815	1.6473			
		2	0.0440	0.0619	0.0454	1.0419			
		3	0.0247	0.0297	0.0196	0.5096			
	17	1	0.0479	0.0321	0.0606	0.9682			
		2	0.0105	0.0252	0.0408	0.5268			
		3	0.0076	0.0077	0.0079	0.1598			
	18	1	0.0480	0.0613	0.0806	1.3078			
		2	0.0652	0.1533	0.0214	1.6521			
		3	0.0179	0.0177	0.0236	0.4077			
	19	1	0.0160	0.0127	0.0328	0.4235			
		2	0.0122	0.0038	0.0189	0.2403			
		3	0.0107	0.0196	0.0023	0.2245			
	20	1	0.0077	0.0220	0.0502	0.5503			
		2	0.0055	0.0016	0.0034	0.0723			
		3	0.0025	0.0022	0.0085	0.0909			
	21	1	0.0074	0.0166	0.0200	0.3031			
		2	0.0026	0.0071	0.0405	0.3457			
		3	0.1426	0.0053	0.0014	1.0282			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 OCTOBER									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM)			MEAN ASH FREE DRY WEIGHT (G/SQ. METER)			
			REP. 1	REP. 2	REP. 3	1	2	3	
ST. CLAIR RIVER	1	1	0.0072	0.0041	0.0003	0.0799			
		2	0.0022	0.0027	0.0029	0.0537			
		3	0.0023	0.0020	0.0024	0.0461			
	2	1	0.0131	0.0217	0.0246	0.4091			
		2	0.1090	0.0110	0.0519	1.1838			
		3	0.0411	0.0426	0.0188	0.7059			
	3	1	0.0016	0.0030	0.0022	0.0468			
		2	0.0116	0.0059	0.0089	0.1818			
		3	0.0111	0.0599	0.0325	0.7128			
	4	1	0.1158	0.1829	0.0319	2.2767			
		2	0.0041	0.0051	0.0146	0.1639			
		3	0.0026	0.0106	0.0101	0.1605			
	5	1	0.0309	0.2114	0.2334	3.2759			
		2	0.0427	0.0518	0.0686	1.1232			
		3	0.0025	0.0014	0.0166	0.1412			
	6	1	0.2308	0.1909	0.0753	3.4227			
		2	0.0854	0.0604	0.0570	1.3966			
		3	0.0221	0.0135	0.0451	0.5557			
	7	1	0.0339	0.0143	0.0094	0.3967			
		2	0.1266	0.2583	0.0440	2.9536			
		3	0.0288	0.0290	0.0081	0.4607			
	8	1	0.0230	0.1357	0.0182	1.2182			
		2	0.0591	0.0548	0.0477	1.1129			
		3	0.0606	0.0135	0.0191	0.6418			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA - 1983						
					OCTOBER	
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
			REP. 1	REP. 2	REP. 3	
ST. CLAIR RIVER	9	1	0.0028	0.0020	0.0019	0.0461
		2	0.0454	0.0394	0.0515	0.9387
		3	0.0553	0.0145	0.0563	0.8684
	10	1	0.0130	0.0261	0.0020	0.2830
		2	0.0260	0.0043	0.0033	0.2314
		3	0.0252	0.0684	0.0207	0.7872

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983							OCTOBER	
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)	REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)	
LAKE ST. CLAIR	11	1	0.0868	0.0607	0.0511	1.3677		
		2	0.0600	0.0287	0.0283	0.8057		
		3	0.1090	0.0360	0.0363	1.2486		
	12	1	0.0214	0.0365	0.0284	0.5943		
		2	0.0663	0.0717	0.0341	1.1852		
		3	0.0562	0.0145	0.0339	0.7203		
	13	1	0.0169	0.0229	0.0487	0.6095		
		2	0.0556	0.0424	0.0309	0.8877		
		3	0.0253	0.0333	0.0294	0.6060		

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 OCTOBER									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM)			MEAN ASH FREE DRY WEIGHT			
			REP. 1	REP. 2	REP. 3	(G/SQ. METER)			
DETROIT RIVER	14	1	0.1404	0.0313	0.0809	1.7396			
		2	0.0033	0.0021	0.0023	0.0530			
		3	0.0103	0.0115	0.0125	0.2362			
	15	1	0.2904	0.0858	0.0897	3.2085			
		2	0.0605	0.0626	0.0829	1.4186			
		3	0.0194	0.0034	0.0068	0.2039			
	16	1	0.0747	0.0323	0.0498	1.0798			
		2	0.0501	0.0188	0.0941	1.1225			
		3	0.0110	0.0244	0.0224	0.3981			
	17	1	0.0236	0.0324	0.0378	0.6460			
		2	0.0384	0.0622	0.0182	0.8181			
		3	0.0126	0.0169	0.0243	0.3705			
	18	1	0.0603	0.0408	0.0253	0.8705			
		2	0.0490	0.0828	0.0770	1.4378			
		3	0.0303	0.0187	0.0285	0.5338			
	19	1	0.0038	0.0203	0.0339	0.3995			
		2	0.0980	0.0564	0.0240	1.2286			
		3	0.0015	0.0035	0.0007	0.0393			
	20	1	0.0283	0.0198	0.0159	0.4408			
		2	0.0543	0.0222	0.0207	0.6694			
		3	0.0033	0.0051	0.0207	0.2004			
	21	1	0.0405	0.0410	0.0519	0.9186			
		2	0.0312	0.0166	0.0165	0.4428			
		3	0.0193	0.0347	0.0196	0.5068			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM)			MEAN ASH FREE DRY WEIGHT			
			REP. 1	REP. 2	REP. 3	(G/SQ. METER)			
ST. CLAIR RIVER	1	1	0.0013	0.0015	0.0014	0.0289			
		2	0.0012	0.0013	0.0017	0.0288			
		3	0.0015	0.0014	0.0019	0.0331			
	2	1	0.0568	0.0695	0.0215	1.0178			
		2	0.0645	0.1001	0.0451	1.4441			
		3	0.0150	0.0350	0.0182	0.4697			
	3	1	0.0010	0.0011	0.0021	0.0289			
		2	0.0016	0.0024	0.0016	0.0386			
		3	0.0414	0.0042	0.0192	0.4463			
	4	1	0.0157	0.0476	0.0366	0.6880			
		2	0.0330	0.0274	0.0557	0.7985			
		3	0.0222	0.0101	0.0461	0.5400			
	5	1	0.1658	0.1989	0.1244	3.3683			
		2	0.0372	0.1618	0.1908	2.6844			
		3	0.0021	0.0016	0.0015	0.0358			
	6	1	0.2447	0.4382	0.1552	5.7717			
		2	0.0079	0.0074	0.0100	0.1742			
		3	0.0041	0.0040	0.0017	0.0675			
	7	1	0.0747	0.0880	0.0406	1.4001			
		2	0.0083	0.1453	0.0944	1.7078			
		3	0.0830	0.2072	0.2087	3.4359			
	8	1	0.0477	0.0812	0.0024	0.9041			
		2	0.0381	0.0097	0.0216	0.4780			
		3	0.0956	0.0742	0.0590	1.5758			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984							MAY	
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)	REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/50. METER)	
ST. CLAIR RIVER	9	1	0.0407	0.0427	0.0277	0.7651		
		2	0.0039	0.0023	0.0029	0.0627		
		3	0.0095	0.0009	0.0019	0.0847		
	10	1	0.0011	0.0009	0.0012	0.0220		
		2	0.0038	0.0036	0.0144	0.1501		
		3	0.0050	0.0034	0.0011	0.0654		

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY						
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
			REP. 1	REP. 2	REP. 3	
LAKE ST. CLAIR	11	1	0.0276	0.0480	0.0503	0.8670
		2	0.0329	0.0480	0.0321	0.7782
		3	0.0488	0.0565	0.0336	0.9566
	12	1	0.0168	0.0208	0.0278	0.4504
		2	0.0210	0.0293	0.0378	0.6067
		3	0.0180	0.0211	0.0143	0.3677
	13	1	0.0125	0.0778	0.0489	0.9662
		2	0.0764	0.0635	0.0737	1.4710
		3	0.0328	0.0434	0.0670	0.9862

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA - 1984 MAY									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT (G/SO. METER)			
			REP. 1	REP. 2	REP. 3	1	2	3	
DETROIT RIVER	14	1	0.0425	0.0451	0.0537	0.9731			
		2	0.0470	0.0368	0.0293	0.7789			
		3	0.0901	0.0524	0.0844	1.5626			
	15	1	0.0068	0.0100	0.0060	0.1570			
		2	0.1546	0.0265	0.0166	1.3615			
		3	0.0017	0.0029	0.0082	0.0881			
	16	1	0.1454	0.1047	0.1543	2.7850			
		2	0.1072	0.0528	0.0641	1.5432			
		3	0.0265	0.0242	0.0162	0.4607			
	17	1	0.0381	0.0456	0.0308	0.7885			
		2	0.0511	0.0397	0.0272	0.8127			
		3	0.0702	0.0037	0.0071	0.5578			
	18	1	0.1862	0.0653	0.0796	2.2801			
		2	0.0364	0.0318	0.0559	0.8547			
		3	0.0909	0.0277	0.0704	1.3015			
	19	1	0.1089	0.2377	0.0209	2.5309			
		2	0.0156	0.0162	0.0140	0.3154			
		3	0.0030	0.0017	0.0114	0.1109			
	20	1	0.0105	0.0065	0.0069	0.1646			
		2	0.0042	0.0139	0.0032	0.1467			
		3	0.0110	0.0047	0.0050	0.1426			
	21	1	0.0219	0.0167	0.0086	0.3250			
		2	0.0031	0.0084	0.0206	0.2210			
		3	0.0106	0.0018	0.0088	0.1460			

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 OCTOBER						
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM)			MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
			REP. 1	REP. 2	REP. 3	
ST. CLAIR RIVER	1	1	0.0015	0.0020	0.0020	0.0378
		2	0.0021	0.0018	0.0016	0.0386
		3	0.0019	0.0006	0.0008	0.0227
	2	1	0.0840	0.0478	0.0706	1.3838
		2	0.1177	0.1101	0.0748	2.0839
		3	0.2513	0.1896	0.0708	3.5240
	3	1	0.0039	0.0015	0.0029	0.0572
		2	0.0060	0.0032	0.0022	0.0785
		3	0.0018	0.0039	0.0034	0.0627
	4	1	0.1332	0.1658	0.1670	3.2092
		2	0.0580	0.0448	0.0332	0.9373
		3	0.0078	0.0529	0.1007	1.1115
	5	1	0.2297	0.3163	0.1466	4.7697
		2	0.1522	0.2071	0.1590	3.8694
		3	0.0463	0.0069	0.0057	0.4056
	6	1	0.0823	0.1486	0.2234	3.1355
		2	0.0655	0.0875	0.0788	1.5963
		3	0.1217	0.0656	0.1044	2.0089
	7	1	0.2464	1.0654	0.1994	10.4071
		2	0.0942	0.0507	0.0210	1.1423
		3	0.0684	0.1028	0.0892	1.7834
	8	1	0.0203	0.0442	0.0602	0.8587
		2	0.0594	0.0497	0.0262	0.9318
		3	0.0326	0.0448	0.0301	0.7403

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA - 1984						
				OCTOBER		
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM)			MEAN ASH FREE DRY WEIGHT (G/50. METER)
			REP. 1	REP. 2	REP. 3	
ST. CLAIR RIVER	9	1	0.0033	0.0022	0.0030	0.0585
		2	0.0019	0.0022	0.0017	0.0399
		3	0.0124	0.0025	0.0197	0.2383
	10	1	0.0020	0.0019	0.0014	0.0365
		2	0.0295	0.0125	0.0320	0.5086
		3	0.0716	0.0708	0.0988	1.6611

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA - 1984						
			OCTOBER		MEAN ASH FREE	
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT (GM) REP. 1 REP. 2 REP. 3	DRY WEIGHT (G/SQ. METER)		
LAKE ST. CLAIR	11	1	0.0387 0.0605 0.0424	0.9751		
		2	0.0569 0.0511 0.0776	1.2782		
		3	0.0821 0.0581 0.0860	1.5577		
	12	1	0.0285 0.0213 0.0187	0.4786		
		2	0.0341 0.0505 0.0257	0.7586		
		3	0.0382 0.0403 0.0287	0.7451		
	13	1	0.0088 0.0087 0.0087	0.1804		
		2	0.0236 0.1121 0.0368	1.1880		
		3	0.3903 0.0182 0.0308	2.9564		

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 OCTOBER									
LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM)			MEAN ASH FREE DRY WEIGHT			
			REP. 1	REP. 2	REP. 3	(G/SQ. METER)			
DETROIT RIVER	14	1	0.1840	0.2080	0.1020	3.4020			
		2	0.0068	0.0051	0.0157	0.1901			
		3	0.0235	0.0127	0.0116	0.3292			
	15	1	0.3209	0.1518	0.1823	4.5108			
		2	0.0521	0.0169	0.0444	0.7809			
		3	0.0650	0.0153	0.1347	1.4806			
	16	1	0.0448	0.0413	0.0365	0.8443			
		2	0.0344	0.0353	0.1594	1.5777			
		3	0.0078	0.0039	0.0092	0.1440			
	17	1	0.0532	0.0775	0.0766	1.4276			
		2	0.0651	0.0191	0.0574	0.9752			
		3	0.0232	0.0111	0.0181	0.3609			
	18	1	0.0416	0.0813	0.0771	1.3774			
		2	0.0467	0.0670	0.0673	1.2466			
		3	0.0616	0.0510	0.0568	1.1657			
	19	1	0.1810	0.0429	0.0246	1.7114			
		2	0.0173	0.0271	0.0151	0.4097			
		3	0.0104	0.0045	0.0262	0.2830			
	20	1	0.0378	0.0733	0.0466	1.0860			
		2	0.0178	0.0087	0.0059	0.2231			
		3	0.0214	0.0161	0.0049	0.2920			
	21	1	0.0515	0.0236	0.0225	0.6721			
		2	0.0210	0.0124	0.0218	0.3802			
		3	0.0021	0.0071	0.0068	0.1102			

APPENDIX F

Macrozoobenthos Physical Data

MACROZOOBENTHOS PHYSICAL DATA-1983 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)
			UPPER	LOWER			SURF.	BOTTOM	SURF.	BOTTOM	
ST. CLAIR RIVER	1	1	308574	496881	10.0	SILTY GRAVEL	7.0	7.2	1.7	1.1	600 200
	2	2	308574	496878	14.0	SAND	5.9	6.0	1.6	1.1	250 100
	3	3	308572	496861	17.0	SAND	5.1	5.0	1.8	1.3	500 200
2	1	1	308755	497136	3.0	SANDY GRAVEL	6.3	6.3	1.1	0.9	300 15
	2	2	308752	497137	10.0	SILT	6.0	6.0	1.9	1.0	400 5
	3	3	308754	497138	15.0	GRAVEL	6.0	6.0	2.2	1.9	400 0
3	1	1	308029	497390	7.0	SANDY GRAVEL	5.0	5.0	0.6	1.1	700 280
	2	2	308023	497380	13.0	GRAVEL	5.0	5.0	1.2	1.3	650 210
	3	3	308019	497375	18.0	GRAVEL	5.0	5.0	1.8	0.9	700 200
4	1	1	309578	498266	3.0	SANDY SILT	6.1	6.1	1.2	1.1	3500 2000
	2	2	309569	498252	10.0	SAND	6.0	6.0	1.8	1.1	3000 350
	3	3	309568	498259	15.0	SAND	6.0	6.0	2.4	2.0	300 300
5	1	1	309945	498663	5.0	SANDY SILT	6.0	6.0	2.2	0.2	3000 1800
	2	2	309945	498653	10.0	SANDY CLAY	5.9	5.9	2.1	1.0	1000 600
	3	3	309941	498651	15.0	SANDY GRAVEL	6.1	6.0	3.0	0.9	3000 250
6	1	1	310125	498762	4.0	SANDY SILT	6.5	6.1	0.3	0.0	3500 900
	2	2	310123	498761	10.0	SANDY SILT	5.9	5.9	1.2	0.6	4000 1300
	3	3	310123	498763	15.0	SANDY SILT	6.0	6.0	1.4	1.2	1000 480
7	1	1	310379	498903	5.0	SANDY SILT	6.0	6.0	0.5	0.4	450 500
	2	2	310378	498904	10.0	SANDY SILT	6.0	5.9	0.9	0.1	630 550
	3	3	310378	498904	20.0	SANDY SILT	6.0	6.0	1.5	1.2	800 520
8	1	1	310662	499026	3.0	SANDY SILT	6.1	6.0	0.5	0.5	3500 2100
	2	2	310662	499026	7.0	SILT	6.0	6.0	1.1	0.5	800 450
	3	3	310662	499026	13.0	SILT	5.7	5.7	0.5	0.5	900 200

9	1	310776 499058	4.0	SANDY SILT	6.0	5.9	0.3	0.0	4300	270
	2	310776 499059	7.0	SANDY SILT	6.0	5.9	0.7	0.2	600	450
	3	310776 499060	10.0	SANDY SILT	5.7	5.6	0.8	1.1	430	310
10	1	310895 499088	3.0	SAND	5.6	5.6	0.7	0.2	3600	1400
	2	310895 499089	7.0	SANDY SILT	5.5	5.5	0.2	0.1	3500	1500
	3	310895 499090	10.0	SANDY SILT	5.6	5.6	0.6	0.6	400	180

MACROZOOBENTHOS PHYSICAL DATA-1983 MAY *NOTE* (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM	TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)	
			UPPER	LOWER				SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM
LAKE ST. CLAIR	11	1	311490	499370	17.0	CLAY		7.3	7.3	0.7	0.0	350	15
		2	311485	499375	20.0	CLAY		7.1	7.1	0.3	0.0	1000	10
		3	311480	499380	25.0	CLAY		6.5	6.1	0.2	0.1	750	45
	12	1	311635	499445	20.0	CLAY		10.0	9.0	0.2	0.2	300	2
		2	311630	499450	20.0	CLAY		10.0	9.0	0.3	0.2	250	2
		3	311625	499455	25.0	CLAY		7.1	7.0	0.2	0.2	300	10
	13	1	311732	499492	20.0	CLAY		8.9	7.9	1.0	0.0	2500	35
		2	311726	499497	20.0	CLAY		9.0	8.0	0.3	0.2	2500	12
		3	311723	499502	25.0	CLAY		9.0	8.1	0.9	0.0	410	2

MACROZOOBENTHOS PHYSICAL DATA-1983 MAY										*NOTE* (-) NUMBERS INDICATE MISSING DATA			
LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM	TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)	
			UPPER	LOWER				SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM
DETROIT RIVER	14	1	312583	499891	6.0	SAND		9.2	9.0	0.8	0.7	3200	39
		2	312580	499892	10.0	SANDY SILT		9.0	9.0	0.7	0.9	3500	10
		3	312578	499895	19.0	SILT		9.0	8.5	0.5	0.6	3200	18
	15	1	312646	499935	6.0	SAND		9.8	9.6	0.7	0.6	3500	120
		2	312647	499931	11.0	SANDY SILT		9.9	9.9	1.3	1.3	3100	12
		3	312646	499926	19.0	SANDY SILT		8.6	8.4	1.6	1.1	3000	3
	16	1	312841	499995	6.0	SILT		8.3	8.1	0.1	0.1	3500	150
		2	312841	499996	11.0	SILT		8.2	8.1	0.2	0.1	3400	17
		3	312842	499998	18.0	SANDY SILT		9.1	9.1	0.9	0.8	3500	4
	17	1	313064	500029	9.0	SANDY SILT		9.1	8.7	0.3	0.1	3000	70
		2	313088	500033	12.0	SILT		8.4	8.3	1.3	0.8	3100	30
		3	313110	500037	20.0	SILT		8.5	8.6	1.4	0.8	3400	7
	18	1	314085	500676	5.0	SILT		10.2	10.2	0.4	0.2	4000	700
		2	314083	500675	10.0	SILT		10.2	10.1	0.3	0.3	2500	850
		3	314083	500675	15.0	SILT		10.2	10.2	0.9	0.4	3100	66
	19	1	314160	500808	6.0	SILTY CLAY		10.0	9.9	0.4	0.1	3500	740
		2	314154	500806	11.0	GRAVEL		10.0	9.9	0.7	0.7	3500	11
		3	314141	500802	20.0	GRAVEL		9.9	9.9	1.3	0.8	650	65
	20	1	314176	500888	5.0	GRAVEL		9.1	9.1	0.7	0.4	4300	800
		2	314158	500888	14.0	SILTY GRAVEL		9.3	9.1	1.7	1.2	3000	15
		3	314152	500889	23.0	SILTY GRAVEL		9.1	9.1	1.9	1.3	3000	28
	21	1	314194	500942	9.0	SANDY SILT		9.1	9.1	0.8	0.5	8	8
		2	314166	500940	20.0	CLAY		9.5	9.5	0.8	0.4	2400	13
		3	314162	500941	25.0	CLAY		9.9	9.7	1.1	0.8	3300	1

MACROZOOBENTHOS PHYSICAL DATA-1983 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)	
						SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM
ST. CLAIR RIVER	1	1	308577 496881	6.0	SAND	-0.1	-0.1	1.8	1.3	2100	1300
		2	308577 496882	9.5	SAND	-0.1	-0.1	1.4	1.1	1400	420
		3	308574 496880	17.0	SAND	-0.1	-0.1	1.6	1.9	1700	460
	2	1	308753 497136	6.0	SANDY SILT	-0.1	-0.1	0.4	0.1	1400	350
		2	308754 497137	11.0	GRAVEL	-0.1	-0.1	1.6	1.4	1000	370
		3	308753 497135	17.0	GRAVEL	-0.1	-0.1	3.0	2.7	1200	200
	3	1	309026 497389	5.5	GRAVEL	-0.1	-0.1	1.9	2.0	570	240
		2	309025 497375	14.0	GRAVEL	-0.1	-0.1	1.4	1.0	400	75
		3	309030 497379	20.0	CLAY	-0.1	-0.1	1.7	1.8	240	66
	4	1	309578 498265	5.0	SANDY SILT	-0.1	-0.1	1.2	0.5	82	46
		2	309568 498254	13.0	SILT	-0.1	-0.1	2.3	1.2	130	64
		3	309566 498258	16.0	SILTY GRAVEL	-0.1	-0.1	2.6	2.8	140	66
	5	1	309946 498662	6.0	SILT	-0.1	-0.1	0.8	0.2	340	12
		2	309937 498651	10.0	SANDY SILT	-0.1	-0.1	1.5	1.2	450	37
		3	309940 498650	16.0	GRAVEL	-0.1	-0.1	2.6	2.0	430	200
	6	1	310122 498756	4.0	SANDY SILT	-0.1	-0.1	1.0	1.0	390	130
		2	310122 498760	7.0	SANDY SILT	-0.1	-0.1	0.7	1.0	640	330
		3	310125 498760	11.0	SILT	-0.1	-0.1	1.2	0.6	1500	330
	7	1	310377 498901	7.0	SANDY SILT	-0.1	-0.1	0.7	0.6	4200	1500
		2	310378 498904	10.0	ORGANIC DEBRIS	-0.1	-0.1	1.6	1.5	550	570
		3	310379 498904	17.0	CLAY	-0.1	-0.1	2.2	1.3	1700	610
	8	1	310652 499021	4.0	CLAY	-0.1	-0.1	0.1	0.1	470	300
		2	310653 499021	8.0	SANDY SILT	-0.1	-0.1	0.4	0.2	480	280
		3	310654 499023	13.0	SANDY SILT	-0.1	-0.1	0.9	0.8	180	34

9	1	310766	499051	5.0	SAND	-0.1	-0.1	0.4	0.4	590	42
	2	310761	499057	7.0	SANDY SILT	-0.1	-0.1	1.0	0.6	250	100
	3	310760	499057	15.0	SILT	-0.1	-0.1	0.4	0.8	270	33
10	1	310888	499088	4.0	SAND	-0.1	-0.1	0.2	0.3	870	410
	2	310881	499091	8.0	SAND	-0.1	-0.1	0.4	0.2	680	300
	3	310878	499090	15.0	SANDY SILT	-0.1	-0.1	0.2	0.1	73	26

MACROZOOBENTHOS PHYSICAL DATA-1983 OCTOBER *NOTE* (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM	TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)	
			UPPER	LOWER				SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM
LAKE ST. CLAIR	11	1	311479	499365	20.0	SILT		13.0	13.0	0.7	0.5	2500	56
		2	311467	499370	21.0	SILT		13.0	13.0	0.3	0.3	2700	24
		3	311465	499378	27.0	SILT		13.0	13.0	0.3	0.2	3800	25
	12	1	311626	499444	22.0	SILT		12.5	12.5	0.3	0.3	1300	11
		2	311620	499448	23.0	SILT		12.1	12.5	0.3	0.2	1700	7
		3	311619	499450	27.0	SILT		12.0	12.5	0.3	0.3	3300	1
	13	1	311713	499486	20.0	SILT		12.0	12.0	0.5	0.1	1000	29
		2	311712	499495	21.0	SILT		12.0	12.1	0.3	0.3	1900	40
		3	311711	499493	27.0	SILT		12.0	12.0	0.3	0.2	1400	28

MACROZOOBENTHOS PHYSICAL DATA-1983 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	UPPER	LOWER	DEPTH (FT.)	BOTTOM	TYPE	TEMP. (C.) SURF. BOTTOM	WATER VEL. (FT./SEC.) SURF. BOTTOM	LIGHT (FT. CANDLES) SURF. BOTTOM
DETROIT RIVER	14	1	312573	499878	7.0	GRAVEL		12.5 12.5	0.7 0.7	1700 260
		2	312575	499890	10.5	SAND		12.0 12.0	1.5 1.0	3400 150
		3	312574	499884	20.0	SAND		12.0 12.0	1.5 1.4	2800 48
	15	1	312650	499940	6.0	SANDY CLAY		11.8 11.8	1.1 0.9	270 73
		2	312649	499930	10.5	SANDY CLAY		11.8 11.8	1.7 0.9	380 50
		3	312648	499930	16.5	SANDY CLAY		11.8 11.8	1.8 1.4	530 26
	16	1	312841	499990	6.0	SILT		11.0 11.0	0.1 0.0	520 140
		2	312840	499992	7.0	SILT		11.5 11.3	0.1 0.0	850 80
		3	312839	499998	15.0	SILT		11.2 11.1	0.6 0.5	450 10
	17	1	313067	500029	9.5	SILTY CLAY		11.0 11.0	0.2 0.1	770 320
		2	313098	500031	11.0	SANDY SILT		11.2 11.2	1.3 0.8	480 140
		3	313109	500039	18.0	SANDY SILT		11.3 11.2	1.3 0.7	280 48
	18	1	314083	500674	6.5	SILT		12.0 12.0	0.3 0.2	250 83
		2	314084	500672	7.0	SILT		12.0 12.0	0.4 0.1	1300 810
		3	314083	500672	15.0	SILT		12.0 12.0	1.0 0.7	1200 30
	19	1	314162	500801	5.5	CLAY		11.5 11.5	0.5 0.2	2900 1600
		2	314158	500804	11.5	SANDY GRAVEL		11.7 11.7	0.5 0.3	670 46
		3	314155	500803	22.0	SANDY GRAVEL		12.0 11.5	1.9 1.3	1700 29
	20	1	314177	500974	6.5	SILT		12.0 12.0	0.5 0.2	1500 400
		2	314165	500881	11.5	SANDY GRAVEL		12.0 12.0	1.4 1.4	470 43
		3	314158	500886	17.0	CLAY		12.0 12.0	1.9 1.7	330 23
	21	1	314200	500841	10.0	SILT		12.0 12.0	0.5 0.4	390 35
		2	314183	500940	11.0	SANDY SILT		12.0 12.0	0.7 0.5	780 42
		3	314178	500940	18.0	SANDY SILT		12.0 12.0	0.7 0.5	560 27

MACROZOOBENTHOS PHYSICAL DATA-1984													MAY													*NOTE* (-) NUMBERS INDICATE MISSING DATA												
LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT																											
			UPPER	LOWER			SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM																										
ST. CLAIR RIVER	1	1	308676	496880	6.5	SAND	4.0	4.0	1.8	1.1	4300	3500																										
		2	308676	496885	10.5	SAND	4.0	3.9	1.7	1.1	4400	2800																										
		3	308675	496881	16.0	SAND	4.0	3.9	1.9	0.9	4200	2600																										
	2	1	308752	497136	5.0	SANDY SILT	4.8	4.7	0.8	1.0	1000	820																										
		2	308754	497137	10.0	GRAVELLY CLAY	4.7	4.6	0.6	0.4	580	270																										
		3	308755	497137	17.0	SANDY GRAVEL	4.6	4.6	2.3	1.7	1100	400																										
	3	1	309028	497390	6.0	SANDY GRAVEL	4.7	4.6	2.4	2.3	3500	2000																										
		2	309023	497378	13.0	SANDY GRAVEL	4.7	4.6	3.1	2.1	3600	1000																										
		3	309026	497376	17.5	GRAVEL	4.7	4.6	2.1	1.5	2800	350																										
	4	1	309576	498265	4.5	SANDY SILT	5.0	5.0	1.2	0.8	300	200																										
		2	309571	498261	10.5	SANDY SILT	5.1	5.1	2.2	1.8	180	49																										
		3	309568	498258	17.0	SANDY SILT	5.2	5.1	2.5	1.9	320	65																										
	5	1	309948	498664	5.0	SANDY SILT	4.9	4.8	1.5	0.2	730	440																										
		2	309941	498653	9.5	SANDY SILT	4.8	4.8	2.1	1.6	500	170																										
		3	309936	498650	15.0	GRAVEL	4.8	4.8	2.8	1.5	200	80																										
	5	1	310122	498758	4.0	SANDY SILT	5.1	5.0	0.6	0.1	520	270																										
		2	310121	498760	8.5	SANDY SILT	4.9	4.9	1.1	0.8	1000	400																										
		3	310122	498760	14.0	SANDY SILT	5.0	5.0	1.3	0.8	1200	410																										
	7	1	310376	498901	6.0	SANDY SILT	5.2	5.2	0.6	0.5	750	210																										
		2	310377	498901	11.0	SILTY CLAY	5.1	5.1	2.4	2.4	1100	230																										
		3	310377	498903	19.0	SILTY CLAY	5.0	5.0	2.6	1.3	1000	56																										
	8	1	310652	499021	4.0	SILTY CLAY	5.2	5.2	0.3	0.1	750	390																										
		2	310650	499024	6.0	SANDY SILT	5.3	5.3	0.9	0.6	800	280																										
		3	310650	499024	15.0	SANDY SILT	5.1	5.1	1.0	0.5	1000	100																										

9	1	310769	499057	5.0	SANDY SILT	6.8	6.7	0.2	0.1	5400	900
	2	310762	499059	8.0	SANDY SILT	6.1	6.0	0.6	0.4	5000	1300
	3	310761	499058	14.0	SAND	6.1	6.0	0.3	0.1	2500	1000
10	1	310885	499092	4.0	SAND	7.2	7.1	0.3	0.3	2200	1400
	2	310880	499093	7.5	SANDY SILT	6.2	6.2	0.2	0.2	4500	550
	3	310880	499095	12.0	SANDY SILT	6.1	6.0	0.4	0.2	2300	720

MACROZOOBENTHOS PHYSICAL DATA-1984										MAY		*NOTE* (-) NUMBERS INDICATE MISSING DATA									
LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)										
			UPPER	LOWER			SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM									
LAKE ST. CLAIR	11	1	311488	499369	21.0	SILT	6.5	6.4	0.2	0.1	3200	100									
		2	311473	499375	23.0	SILT	6.3	6.2	0.2	0.2	1000	100									
		3	311472	499377	25.0	SILT	6.3	6.1	0.2	0.0	1300	630									
	12	1	311626	499449	21.0	SILT	7.0	6.9	0.2	0.1	1400	100									
		2	311625	499455	22.0	SILT	7.0	6.9	0.2	0.1	1400	120									
		3	311626	499456	25.0	SILT	7.0	6.9	0.1	0.0	1500	45									
	13	1	311725	499491	21.0	SILT	6.8	6.7	0.5	0.2	200	1									
		2	311722	499495	21.5	SILTY CLAY	6.8	6.7	0.4	0.1	160	1									
		3	311716	499499	25.0	SILTY CLAY	6.8	6.7	0.4	0.2	150	1									

MACROZOOBENTHOS PHYSICAL DATA-1984 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	UPPER	COORD. LOWER	DEPTH (FT.)	BOTTOM	TYPE	TEMP. (C.) SURF. BOTTOM	WATER VEL. (FT./SEC.) SURF. BOTTOM	LIGHT (FT. CANDLES) SURF. BOTTOM
DETROIT RIVER	14	1	312578	499884	8.5	SAND		6.3 6.3	0.8 0.0	100 15
		2	312579	499888	11.0	SAND		6.4 6.4	1.0 0.4	150 25
		3	312574	499892	18.0	SANDY SILT		7.2 7.1	1.1 1.0	200 5
	15	1	312648	499938	8.0	SANDY CLAY		7.8 7.8	0.4 0.4	15 0
		2	312651	499933	11.0	SANDY GRAVEL		7.8 7.8	0.7 0.4	35 0
		3	312650	499930	19.0	SANDY SILT		7.8 7.7	1.0 0.9	120 0
	16	1	312842	499994	6.0	SILT		8.3 8.3	0.1 0.1	150 10
		2	312844	499998	9.0	SILTY CLAY		8.2 8.1	0.4 0.3	150 15
		3	312850	499998	17.0	SANDY SILT		7.8 7.7	1.4 1.3	140 0
	17	1	313066	500028	9.5	SILT		7.3 7.2	0.4 0.1	16000 28
		2	313088	500032	12.0	SILT		7.6 7.4	0.8 0.5	650 20
		3	313108	500038	20.0	SANDY SILT		7.4 7.4	1.4 1.0	1300 0
	18	1	314083	500675	7.0	SILT		6.7 6.7	0.4 0.4	570 48
		2	314083	500674	9.0	SILT		6.7 6.7	0.4 0.6	650 66
		3	314084	500676	16.0	SILT		6.8 6.6	0.9 0.2	4500 4
	19	1	314161	500806	6.0	SANDY SILT		6.7 6.6	0.5 0.2	580 160
		2	314156	500801	12.5	SANDY SILT		6.6 6.4	0.9 0.9	3300 12
		3	314155	500800	19.0	GRAVELLY CLAY		6.4 6.3	0.7 0.8	3100 10
	20	1	314180	500886	5.5	COBBLE		3.7 3.7	1.1 0.7	2000 130
		2	314163	500890	12.0	SILTY CLAY		3.5 3.5	1.5 0.8	2300 2
		3	314155	500886	19.0	SANDY SILT		3.9 3.8	1.6 0.7	2400 0
	21	1	314198	500943	8.5	SANDY SILT		3.7 3.6	1.2 0.9	2100 35
		2	314180	500939	14.0	SILTY CLAY		3.7 3.7	0.8 0.4	3700 5
		3	314172	500937	20.0	GRAVELLY CLAY		3.9 3.9	1.7 1.3	2000 0

MACROZOOBENTHOS PHYSICAL DATA-1984 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)	
			UPPER	LOWER			SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM
ST. CLAIR RIVER	1	1	308678	496880	6.0	SAND	15.2	15.1	1.6	1.0	1600	750
		2	308673	496882	11.0	SANDY GRAVEL	15.2	15.1	1.8	1.1	2000	800
		3	308672	496876	15.0	SAND	15.2	15.1	1.9	1.1	1300	710
	2	1	308754	497134	5.5	SANDY SILT	15.2	15.1	0.5	0.4	1400	1000
		2	308752	497134	10.0	SANDY SILT	15.2	15.1	1.0	1.1	2500	650
		3	308755	497139	15.0	GRAVEL	15.2	15.1	1.8	1.2	1500	670
	3	1	309023	497389	5.5	GRAVEL	14.1	14.0	2.2	2.1	1100	870
		2	309020	497381	13.0	GRAVEL	14.1	14.0	2.4	1.9	770	450
		3	309016	497374	17.0	GRAVEL	14.1	14.0	2.7	2.7	870	430
	4	1	309580	498265	4.0	SANDY SILT	14.3	14.3	0.9	0.2	670	460
		2	309570	498253	10.0	SANDY SILT	14.4	14.3	2.0	0.3	3000	650
		3	309568	498257	15.0	SAND	14.3	14.2	2.5	1.2	1300	370
	5	1	309948	498661	4.5	SANDY SILT	14.2	14.1	1.2	1.0	560	250
		2	309942	498653	9.0	SANDY SILT	14.2	14.1	1.7	0.2	480	28
		3	309939	498650	16.0	SANDY GRAVEL	14.1	14.1	2.6	2.6	300	75
	6	1	310122	498761	4.0	SANDY SILT	14.3	14.2	0.2	0.1	400	320
		2	310121	498760	10.0	SANDY SILT	14.2	14.2	0.4	0.2	650	120
		3	310120	498761	13.0	SANDY SILT	14.2	14.1	0.7	0.5	350	13
	7	1	310376	498902	6.0	SANDY SILT	14.5	14.3	0.7	0.5	270	170
		2	310376	498904	10.0	SANDY SILT	14.4	14.2	0.7	0.7	520	25
		3	310377	498902	16.0	SANDY CLAY	14.2	14.1	1.4	1.1	580	140
	8	1	310651	499021	3.0	SANDY SILT	14.7	14.7	0.1	0.1	210	150
		2	310652	499025	7.5	SANDY SILT	14.5	14.3	0.1	0.0	170	82
		3	310652	499027	13.0	SANDY SILT	14.4	14.2	0.3	0.0	500	10

9	1	310769	499054	6.0	SAND	14.4	14.3	0.2	0.1	250	110
	2	310770	499058	7.0	SAND	14.5	14.4	0.3	0.2	240	100
	3	310771	499059	14.0	SAND	14.5	14.3	0.3	0.3	270	14
10	1	310888	499088	4.0	SAND	14.5	14.4	0.3	0.3	95	63
	2	310887	499090	8.0	SAND	14.5	14.4	0.3	0.3	110	46
	3	310888	499095	12.0	SANDY SILT	14.4	14.3	0.5	0.2	91	23

MACROZOOBENTHOS PHYSICAL DATA-1984					OCTOBER		*NOTE* (-) NUMBERS INDICATE MISSING DATA						
LOCATION	TRANSECT	STATION	LORAN COORD.		DEPTH (FT.)	BOTTOM	TYPE	TEMP. (C.)		WATER VEL. (FT./SEC.)		LIGHT (FT. CANDLES)	
			UPPER	LOWER				SURF.	BOTTOM	SURF.	BOTTOM	SURF.	BOTTOM
LAKE ST. CLAIR	11	1	311486	499374	20.0	SILT		14.3	14.1	0.4	0.1	840	100
		2	311476	499376	21.5	SILT		14.5	14.2	0.2	0.1	1300	68
		3	311478	499380	24.0	SILT		14.3	14.1	0.2	0.1	700	27
	12	1	311628	499444	20.0	SILT		14.8	14.4	0.2	0.1	3200	160
		2	311623	499451	23.0	SILT		14.5	14.3	0.3	0.2	3200	100
		3	311623	499453	25.5	SILT		14.9	14.5	0.3	0.2	3300	98
	13	1	311715	499480	20.0	SILT		14.9	14.5	0.3	0.4	3100	160
		2	311715	499499	23.0	SILT		14.9	14.5	0.5	0.2	3300	100
		3	311720	499501	28.0	SILT		14.8	14.5	0.5	1.1	4200	55

MACROZOOBENTHOS PHYSICAL DATA-1984 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	UPPER	COORD.	DEPTH	BOTTOM	TYPE	TEMP. (C.)	WATER VEL.	LIGHT
			LOWER		(FT.)			SURF. BOTTOM	(FT./SEC.)	(FT. CANDLES)
								SURF. BOTTOM	SURF. BOTTOM	SURF. BOTTOM
DETROIT RIVER	14	1	312581	499885	7.0	SANDY GRAVEL	14.9	14.8	1.0	0.3
		2	312575	499890	10.0	SANDY GRAVEL	14.8	14.7	0.8	0.5
		3	312574	499890	16.0	SAND	14.8	14.7	1.5	0.8
	15	1	312647	499938	6.0	SANDY GRAVEL	14.8	14.7	0.6	0.4
		2	312651	499936	10.0	SANDY CLAY	14.8	14.5	1.4	0.8
		3	312648	499932	15.0	SANDY CLAY	14.8	14.8	2.0	0.9
	16	1	312842	499994	6.0	SILT	14.8	14.7	0.1	0.1
		2	312845	499993	9.0	SILT	14.9	14.8	0.1	0.1
		3	312845	499998	15.0	SANDY SILT	14.2	14.2	0.8	0.6
	17	1	313085	500031	9.0	SILTY GRAVEL	14.9	14.9	0.2	0.1
		2	313101	500032	12.0	SAND	14.5	14.4	1.7	1.2
		3	313108	500037	16.0	SAND	14.4	14.3	1.6	0.8
	18	1	314089	500681	6.0	SILT	14.8	14.8	0.4	0.1
		2	314089	500679	9.5	SILT	14.8	14.8	0.2	0.1
		3	314089	500680	15.0	SANDY SILT	14.8	14.7	0.7	0.3
	19	1	314162	500801	6.0	SILTY CLAY	14.5	14.5	0.3	0.0
		2	314157	500801	11.0	SANDY GRAVEL	14.7	14.7	0.8	1.0
		3	314155	500803	21.0	SANDY GRAVEL	14.5	14.5	1.4	0.2
	20	1	314179	500888	4.5	COBBLE	14.5	14.5	0.4	0.2
		2	314164	500886	12.0	GRAVELLY CLAY	14.5	14.5	2.2	1.3
		3	314157	500891	20.5	SANDY CLAY	14.5	14.5	2.2	1.6
	21	1	314199	500944	9.0	SANDY CLAY	14.5	14.5	0.7	0.2
		2	314181	500942	12.0	SILT	14.5	14.5	0.8	0.3
		3	314180	500945	20.0	GRAVELLY CLAY	14.5	14.5	0.9	0.7

APPENDIX G

Macrozoobenthos Physical Data - A Summary

Appendix G

Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

Transect	Station	Water depth (ft.)	Frequency of occurrence of substrate type*	Mean current velocity (ft/sec)	
				Surface	Bottom
1	1	6-10	**Sa(3), SiGr(1)***	1.7(1.6-1.8)	1.1(1.0-1.3)
	2	10-14	Sa(3), SaGr(1)	1.6(1.4-1.7)	1.1(1.1-1.1)
	3	15-17	Sa(4)	1.8(1.6-1.9)	1.3(0.9-1.9)
2	1	3-6	SaSi(3), SaGr(1)	0.7(.4-1.1)	0.6(0.1-1.0)
	2	10-11	Si(1), GrCl(1), SaSi(1), Gr(1)	1.3(0.6-1.9)	1.0(0.4-1.4)
	3	15-17	Gr(3), SaGr(1)	2.3(1.8-3.0)	1.9(1.2-2.7)
3	1	6-7	SaGr(2), Gr(2)	1.8(0.6-2.4)	1.9(1.1-2.3)
	2	13-14	Gr(3), SaGr(1)	2.0(1.2-3.1)	1.6(1.0-2.1)
	3	17-20	Gr(3), Cl(1)	2.1(1.7-2.7)	1.7(0.9-2.7)
4	1	3-5	SaSi(4)	1.1(0.9-1.2)	0.6(0.2-1.1)
	2	10-13	SaSi(2), Sa(1)Si(1)	2.1(1.8-2.3)	1.1(0.3-1.8)
	3	15-17	Sa(2), SaSi(1), SiGr(1)	2.5(2.4-2.6)	2.0(1.2-2.8)
5	1	4-6	SaSi(3), Si(1)	1.4(0.8-2.2)	0.4(0.2-1.0)
	2	9-10	SaSi(3), SaCl(1)	1.8(1.5-2.1)	1.0(0.2-1.6)
	3	15-16	SaGr(2), Gr(2)	2.8(2.6-3.0)	1.8(0.9-2.6)
6	1	4	SaSi(4)	0.5(0.2-1.0)	0.3(0.0-1.0)
	2	7-10	SaSi(4)	0.8(0.4-1.2)	0.6(0.2-1.0)
	3	11-15	SaSi(3)Si(1)	1.2(0.7-1.4)	0.8(0.5-1.2)
7	1	5-7	SaSi(4)	0.6(0.5-0.7)	0.5(0.4-0.6)
	2	10-11	SaSi(2), SiCl(1), OrDe(1)	1.4(0.7-2.4)	1.2(0.1-2.4)
	3	16-20	Cl(1), SiCl(1), SaCl(1), SaSi(1)	1.9(1.4-2.6)	1.2(1.1-1.3)
8	1	3-4	SaSi(2), SiCl(1), Cl(1)	0.2(0.1-0.5)	0.2(0.1-0.5)
	2	6-8	SaSi(3)Si(1)	0.6(0.1-1.1)	0.3(0.0-0.6)
	3	13-15	SaSi(3), Si(1)	0.7(0.3-1.0)	0.4(0.0-0.8)

CONTINUED

Appendix G

Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

2

Transect	Station	Water depth (ft.)	Frequency of occurrence of substrate type*	Mean current velocity (ft/sec)	
				Surface	Bottom
9	1	4-6	SaSi(2),Sa(2)	0.3(0.2-0.4)	0.2(0.0-0.4)
	2	7-8	SaSi(3),Sa(1)	0.6(0.3-1.0)	0.4(0.2-0.6)
	3	10-15	Sa(2),SaSi(1),Si(1)	0.4(0.3-0.8)	0.6(0.1-1.1)
10	1	3-4	Sa(4)	0.4(0.2-0.7)	0.3(0.2-0.3)
	2	7-8	Sa(2),SaSi(2)	0.3(0.2-0.4)	0.2(0.1-0.3)
	3	10-15	SaSi(4)	0.4(0.2-0.6)	0.3(0.1-0.6)
11	1	17-21	SiCl(4)	0.5(0.2-0.7)	0.2(0.0-0.5)
	2	20-23	SiCl(4)	0.2(0.2-0.3)	0.2(0.0-0.3)
	3	24-27	SiCl(4)	0.2(0.2-0.3)	0.1(0.0-0.2)
12	1	20-22	SiCl(4)	0.2(0.2-0.3)	0.2(0.1-0.3)
	2	20-23	SiCl(4)	0.3(0.2-0.3)	0.2(0.1-0.2)
	3	25-27	SiCl(4)	0.2(0.1-0.3)	0.2(0.0-0.3)
13	1	20-21	SiCl(4)	0.6(0.3-1.0)	0.2(0.0-0.4)
	2	20-23	SiCl(4)	0.4(0.3-0.5)	0.2(0.1-0.3)
	3	25-28	SiCl(4)	0.5(0.3-0.9)	0.4(0.0-1.1)
14	1	6-8	Sa(2),SaGr(1),Gr(1)	0.8(0.7-1.0)	0.4(0.0-0.7)
	2	10-11	Sa(2),SaSi(1),SaGr(1)	1.0(0.7-1.5)	0.7(0.4-1.0)
	3	16-20	Sa(2),Si(1),SaSi(1)	1.2(0.5-1.5)	1.0(0.6-1.4)
15	1	6-8	SaCl(2),SaSi(1),SaGr(1)	0.7(0.4-1.1)	0.6(0.4-0.9)
	2	10-11	SaCl(2),SaSi(1),SaGr(1)	1.3(0.7-1.7)	0.7(0.4-0.9)
	3	15-19	SaCl(2),SaSi(2)	1.6(1.0-2.0)	1.1(0.9-1.4)
16	1	6	Si(4)	0.1(0.1-0.1)	0.1(0.1-0.1)
	2	7-11	Si(3),SiCl(1)	0.2(0.1-0.4)	0.1(0.0-0.3)
	3	15-18	SaSi(3),Si(1)	0.9(0.6-1.4)	0.8(0.5-1.3)

CONTINUED

Appendix G

Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

3

Transect	Station	Water depth (ft.)	Frequency of occurrence of substrate type*	Mean current velocity (ft/sec)	
				Surface	Bottom
17	1	9-10	Si(1), SiCl(1), SaSi(1), SiGr(1)	0.3(0.2-0.4)	0.1(0.1-0.1)
	2	11-12	Si(2), SaSi(1), Sa(1)	1.3(0.8-1.7)	0.8(0.5-1.2)
	3	16-20	SaSi(2), Si(1), Sa(1)	1.4(1.3-1.6)	0.8(0.7-1.0)
18	1	5-7	Si(4)	0.4(0.3-0.4)	0.2(0.1-0.4)
	2	7-10	Si(4)	0.3(0.2-0.4)	0.3(0.1-0.6)
	3	15-16	Si(3), SaSi(1)	0.9(0.7-1.0)	0.4(0.2-0.7)
19	1	5-6	SiCl(2), Cl(1), SaSi(1)	0.4(0.3-0.5)	0.1(0.0-0.2)
	2	11-12	SaGr(2), SaSi(1), Gr(1)	0.7(0.5-0.9)	0.7(0.3-1.0)
	3	19-22	SaGr(2), GrCl(1), Gr(1)	1.3(0.7-1.9)	0.8(0.2-1.3)
20	1	4-6	Co(2), Si(1), Gr(1)	0.7(0.4-1.1)	0.4(0.2-0.7)
	2	12-14	SiCl(1), GrCl(1), SiGr(1), SaGr(1)	1.7(1.4-2.2)	1.2(0.8-1.4)
	3	17-23	Cl(1), SaCl(1), SaSi(1), SiGr(1)	1.9(1.6-2.2)	1.3(0.7-1.7)
21	1	8-10	SaSi(2), Si(1), SaCl(1)	0.8(0.5-1.2)	0.5(0.2-0.9)
	2	11-20	Cl(1), Si(1), SiCl(1), SaSi(1)	0.8(0.7-0.8)	0.4(0.3-0.5)
	3	18-25	GrCl(2), Cl(1), SaSi(1)	1.1(0.7-1.7)	0.8(0.5-1.3)

* Cl = clay, SiCl = silty clay, SaCl = sandy clay, GrCl = gravelly clay, Si = silt, SaSi = sandy silt, Sa = sand, SiGr = silty gravel, SaGr = sandy gravel, Gr = gravel, Co = cobble, OrDe = organic debris.

** Clay = very cohesive and malleable fine sediments
 Silt = unconsolidate fine sediments
 Sand = 0.062 - 2 mm
 Gravel = 2-64 mm
 Cobble = 64 mm

***Frequency of occurrence, each station was sampled four times, twice in May and October.

APPENDIX H

Macrozoobenthos ANOVA Tables

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: EUG1		+YCR2		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	219229.98215768	873.42463425	23.50
ERROR	504	18730.85685556	37.16439853	
CORRECTED TOTAL	755	237960.44005747		

SOURCE	DF	ANOVA SS	F VALUE	PR	F
TRANSECT	20	61748.82715738	83.08	C.CCC1	
YEAR	1	861.84545577	22.15	C.CCC1	
TRANSECT*YEAR	20	16706.21716700	22.46	C.CCC1	
PCATH	1	5567.74200236	141.74	C.CCC1	
TRANSECT*PCATH	20	42207.81073504	56.79	C.CCC1	
YEAR*PCATH	1	20088.82267702	540.45	C.CCC1	
TRANSECT*YEAR*PCATH	20	23841.88827386	45.53	C.CCC1	
STATION	2	1356.22225310	18.78	C.CCC1	
TRANSECT*STATION	40	11382.90340162	7.66	C.CCC1	
YEAR*STATION	2	325.26736608	4.51	C.C114	
TRANSECT*YEAR*STATION	40	7527.83517548	5.06	C.CCC1	
PCATH*STATION	2	671.50548227	5.03	C.CCC1	
TRANSECT*PCATH*STATION	40	10007.06047088	7.27	C.CCC1	
YEAR*PCATH*STATION	2	420.00142373	5.65	C.C037	
TRANSECT*YEAR*PCATH*STATION	40	5567.82415128	4.01	C.CCC1	

PR	F	R-SQUARE	C.V.
0.0001		0.521266	71.1825

RECT MSE	BLG1 MEAN
6.09626103	8.56414546

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: EUG2		TLRBELLARJA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4245.65166223	16.93104328	7.75
ERROR	504	1100.29637476	2.18332614	
CORRECTED TOTAL	755	5350.08823699		

SOURCE	DF	ANOVA SS	F VALUE	PR	F
TRANSECT	20	1237.90257283	26.25	C.CCC1	
YEAR	1	162.02235108	74.67	C.CCC1	
TRANSECT*YEAR	20	270.46410257	6.19	C.CCC1	
PCATH	1	81.35302401	37.26	C.CCC1	
TRANSECT*PCATH	20	322.65094221	7.62	C.CCC1	
YEAR*PCATH	1	28.53614500	17.65	C.CCC1	
TRANSECT*YEAR*PCATH	20	185.91244500	4.24	C.CCC1	
STATION	2	251.06521271	68.66	C.CCC1	
TRANSECT*STATION	40	832.58124525	5.54	C.CCC1	
YEAR*STATION	2	12.06715816	2.55	C.C511	
TRANSECT*YEAR*STATION	40	224.77864058	2.57	C.CCC1	
PCATH*STATION	2	14.12653635	3.24	C.C401	
TRANSECT*PCATH*STATION	40	241.66282885	3.51	C.CCC1	
YEAR*PCATH*STATION	2	16.43265485	3.76	C.C239	
TRANSECT*YEAR*PCATH*STATION	40	205.62282741	2.35	C.CCC1	

PR	F	R-SQUARE	C.V.
0.0001		0.754222	56.2150

RECT MSE	BLG2 MEAN
1.47740825	2.02263852

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE - BUG2		NEMERTINEA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2584.3555E242	15.874CB758	6.80
ERROR	504	1176.22E756E2	2.3335E563	
CORRECTED TOTAL	755	5160.72474025		
SOURCE	DF	ANCOVA SS	F VALUE	PR F
TRANSECT	20	1729.60526522	37.05	C.CCC1
YEAR	1	C.55278857	C.41	C.5232
TRANSECT*YEAR	20	119.328E2232	2.96	C.CC03
PCATH	1	458.C5317751	213.41	C.CCC1
TRANSECT*PCATH	20	482.637452E6	10.34	C.CCC1
YEAR*PCATH	1	2.7456CC21	-1.18	C.2783
TRANSECT*YEAR*PCATH	20	180.C8232217	3.86	C.CCC1
STATION	2	14.73216716	3.16	C.C435
TRANSECT*STATION	40	155.777645CC	2.14	C.CCC1
YEAR*STATION	2	2.82692415	C.61	C.5450
TRANSECT*YEAR*STATION	40	254.C45128E4	2.72	C.CCC1
PCATH*STATION	2	5.62772527	2.06	C.1282
TRANSECT*PCATH*STATION	40	282.446725C2	2.03	C.CCC1
YEAR*PCATH*STATION	2	12.33424166	2.64	C.C722
TRANSECT*YEAR*PCATH*STATION	40	155.137623E5	2.05	C.CCC2
PR	F	R-SQUARE	C.V.	
0.0001	C.772CC1	67.5724		
ADJUSTED MSE		BLG3 MEAN		
1.52773872		2.26CE5715		

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE - BUG4		NEMATODA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	5715.818EC744	38.70B44146	8.97
ERROR	504	2174.40271240	4.31425110	
CORRECTED TOTAL	755	11890.22151584		
SOURCE	DF	ANCOVA SS	F VALUE	PR F
TRANSECT	20	4071.43CC5C67	47.15	C.CC01
YEAR	1	33.C18224E5	7.65	C.CC59
TRANSECT*YEAR	20	366.C35E5E22	4.24	C.CC01
PCATH	1	515.CC527472	120.30	C.CC01
TRANSECT*PCATH	20	261.5558CC16	4.20	C.CC01
YEAR*PCATH	1	110.2053E2E5	25.55	C.CCC1
TRANSECT*YEAR*PCATH	20	172.35E5E645	2.00	C.CC64
STATION	2	132.71256725	15.50	C.CCC1
TRANSECT*STATION	40	25CC.C152E151	14.45	C.CC01
YEAR*STATION	2	12.4514E455	1.45	C.2361
TRANSECT*YEAR*STATION	40	322.441C17E8	1.87	C.CC13
PCATH*STATION	2	135.27722457	15.45	C.CCC1
TRANSECT*PCATH*STATION	40	611.57672676	3.54	C.CC01
YEAR*PCATH*STATION	2	16.253C6455	1.50	C.1514
TRANSECT*YEAR*PCATH*STATION	40	245.75271025	2.03	C.CC03
PR	F	R-SQUARE	C.V.	
0.0001	C.817127	39.0540		
ADJUSTED MSE		BLG4 MEAN		
2.07708717		5.212C54C1		

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PRECEDURE

DEPENDENT VARIABLE BUGS		FIRLEINEA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	64.67127656	C.25765449	4.16
ERROR	504	31.19669051	C.06190256	
CORRECTED TOTAL	755	95.87016746		
SOURCE	DF	ANCOVA SS	F VALUE	PR > F
TRANSECT	20	20.17672709	16.30	C.0001
YEAR	1	C.13564556	2.26	C.1335
TRANSECT*YEAR	20	1.46406506	1.16	C.2639
PCNT	1	C.49476671	7.25	C.0069
TRANSECT*PCNT	20	2.22752620	1.80	C.0182
YEAR*PCNT	1	C.08466255	1.37	C.2422
TRANSECT*YEAR*PCNT	20	1.20057515	C.57	C.4977
STATION	2	5.06155516	40.65	C.0001
TRANSECT*STATION	40	21.68532751	6.76	C.0001
YEAR*STATION	2	C.14405242	1.16	C.3132
TRANSECT*YEAR*STATION	40	2.53350715	1.02	C.4343
PCNT*STATION	2	C.02154457	C.17	C.6403
TRANSECT*PCNT*STATION	40	3.77666623	1.53	C.0230
YEAR*PCNT*STATION	2	C.46793855	3.78	C.0236
TRANSECT*YEAR*PCNT*STATION	40	5.22555552	2.11	C.0001
PR	F	R-SQUARE	C.V.	
0.0001		C.674571	25.2556	
RCCT PSE		BLGE MEAN		
0.24860225		C.64515512		

ANALYSIS OF VARIANCE PRECEDURE

DEPENDENT VARIABLE BUGS		CLIGOCMAETA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	136674.56460677	552.28511756	14.21
ERROR	504	15622.97622156	30.93447663	
CORRECTED TOTAL	755	156497.54082833		
SOURCE	DF	ANCOVA SS	F VALUE	PR > F
TRANSECT	20	72356.56318351	52.52	C.0001
YEAR	1	63.17656667	1.62	C.2033
TRANSECT*YEAR	20	4669.87819115	C.00	C.0001
PCNT	1	554.71267806	15.27	C.0001
TRANSECT*PCNT	20	7705.55405266	5.50	C.0001
YEAR*PCNT	1	3544.00178901	101.30	C.0001
TRANSECT*YEAR*PCNT	20	10700.51668327	13.74	C.0001
STATION	2	2380.16007025	30.57	C.0001
TRANSECT*STATION	40	18276.46501154	11.74	C.0001
YEAR*STATION	2	158.20070822	2.01	C.1356
TRANSECT*YEAR*STATION	40	7420.57265546	4.77	C.0001
PCNT*STATION	2	262.63657210	3.37	C.0351
TRANSECT*PCNT*STATION	40	5215.37214225	3.41	C.0001
YEAR*PCNT*STATION	2	480.24057068	6.17	C.0023
TRANSECT*YEAR*PCNT*STATION	40	4543.05014712	2.52	C.0001
PR	F	R-SQUARE	C.V.	
0.0001		0.676194	43.7413	
RCCT PSE		BLGE MEAN		
6.23974972		14.26513209		

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
YUG7	251	27655.07650007	110.19552550	16.61
ERROR	504	3244.02545550	6.43457508	
CORRECTED TOTAL	755	31000.10195557		

SOURCE	DF	ANOVA SS	F VALUE	PR	F
TRANSECT	20	10345.41220165	77.56	C.CCC1	
YEAR	1	374.52476723	56.45	C.CCC1	
TRANSECT*YEAR	20	1163.41852160	8.92	C.CCC1	
PCNT#	1	63.56277766	12.55	C.CCC1	
TRANSECT*PCNT#	20	2510.75264630	18.92	C.CCC1	
YEAR*PCNT#	1	132.00211000	16.50	C.CCC1	
TRANSECT*YEAR*PCNT#	20	430.31481106	3.24	C.CCC1	
STATION	2	104.54147411	7.51	C.CCC1	
TRANSECT*STATION	40	1646.22215465	25.80	C.CCC1	
YEAR*STATION	2	286.46467753	21.55	C.CCC1	
TRANSECT*YEAR*STATION	40	1661.82725010	7.02	C.CCC1	
PCNT#*STATION	2	125.21156667	9.44	C.CCC1	
TRANSECT*PCNT#*STATION	40	2725.43245048	10.28	C.CCC1	
YEAR*PCNT#*STATION	2	62.54731505	6.25	C.CCC1	
TRANS*YEAR*PCNT#*STAT	40	559.88504278	2.11	C.CCC1	

FR F R-SQUARE C.V.
 0.0001 0.852135 62.5561
 RCCT MSE BLGT MEAN
 2.57584531 4.05136615

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
YUG8	251	2747.57577160	10.94651702	6.71
ERROR	504	822.67252252	1.63228755	
CORRECTED TOTAL	755	3570.24829412		

SOURCE	DF	ANOVA SS	F VALUE	PR	F
TRANSECT	20	625.82427271	15.17	C.CCC1	
YEAR	1	162.54728525	100.44	C.CCC1	
TRANSECT*YEAR	20	211.14556182	6.47	C.CCC1	
PCNT#	1	62.07161267	38.03	C.CCC1	
TRANSECT*PCNT#	20	274.43686165	8.41	C.CCC1	
YEAR*PCNT#	1	32.46610054	19.65	C.CCC1	
TRANSECT*YEAR*PCNT#	20	157.41327757	4.62	C.CCC1	
STATION	2	50.81587757	27.62	C.CCC1	
TRANSECT*STATION	40	602.77581748	9.23	C.CCC1	
YEAR*STATION	2	5.42188255	2.85	C.CCC1	
TRANSECT*YEAR*STATION	40	175.22261650	2.68	C.CCC1	
PCNT#*STATION	2	16.70276514	5.12	C.CCC1	
TRANSECT*PCNT#*STATION	40	175.21600777	2.74	C.CCC1	
YEAR*PCNT#*STATION	2	11.70142057	3.58	C.CCC1	
TRANS*YEAR*PCNT#*STAT	40	134.35425543	2.06	C.CCC1	

FR F R-SQUARE C.V.
 0.0001 0.765575 72.4755
 RCCT MSE BLGT MEAN
 1.27761009 1.73661565

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	DEGS	CSTRACODA		
SOURCE	DF	SS OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4385.18556000	17.47087474	9.78
ERROR	504	500.36141147	1.78643137	
CORRECTED TOTAL	755	5285.55057207		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	821.76447734	23.28	C.CCC1
YEAR	1	14.58643362	8.35	C.CC39
TRANSECT*YEAR	20	110.17732531	3.06	C.CCC1
PCATH	1	45.56884418	27.75	C.CCC1
TRANSECT*PCATH	20	560.73055821	26.85	C.CCC1
YEAR*PCATH	1	4.01174245	2.25	C.1346
TRANSECT*YEAR*PCATH	20	155.76645400	4.47	C.CCC1
STATICA	2	25.20750125	7.06	C.CCC1
TRANSECT*STATICA	40	817.65312446	11.44	C.CCC1
YEAR*STATICA	2	7.74550567	2.17	C.1155
TRANSECT*YEAR*STATICA	40	337.32950260	4.72	C.CCC1
PCATH*STATICA	2	37.43100790	10.48	C.CCC1
TRANSECT*PCATH*STATICA	40	725.33655556	10.21	C.CCC1
YEAR*PCATH*STATICA	2	11.17784641	3.13	C.C446
TRANSECT*YEAR*PCATH*STATICA	40	288.25855647	4.03	C.CCC1
	PR F	R-SQUARE	C.V.	
	0.0001	0.829656	81.5765	
	RCCT MSE		BLGS MEAN	
	1.33657449		1.62843107	

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	DEGIC	CAMMARUS		
SOURCE	DF	SS OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	8802.31558702	35.06858800	8.74
ERROR	504	2021.37504685	4.01066478	
CORRECTED TOTAL	755	10823.69103388		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	2509.87492865	36.28	C.CCC1
YEAR	1	16.51818015	4.22	C.C405
TRANSECT*YEAR	20	263.26221605	4.53	C.CCC1
PCATH	1	435.84505515	105.67	C.CCC1
TRANSECT*PCATH	20	614.51628256	7.67	C.CCC1
YEAR*PCATH	1	16.16657880	4.03	C.C492
TRANSECT*YEAR*PCATH	20	655.18645753	8.67	C.CCC1
STATICA	2	661.85752446	82.51	C.CCC1
TRANSECT*STATICA	40	1353.79057262	8.44	C.CCC1
YEAR*STATICA	2	40.66660404	5.07	C.CC66
TRANSECT*YEAR*STATICA	40	223.88395885	2.02	C.CCC3
PCATH*STATICA	2	70.57855936	8.80	C.CC02
TRANSECT*PCATH*STATICA	40	532.20810000	5.81	C.CCC1
YEAR*PCATH*STATICA	2	9.86583525	1.23	C.2932
TRANSECT*YEAR*PCATH*STATICA	40	253.23257135	2.20	C.CCC1
	PR F	R-SQUARE	C.V.	
	0.0001	0.812245	64.5325	
	RCCT MSE		BLGIC MEAN	
	2.00266442		2.06420266	

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE - BUG11		HYALLELA			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	251	1616.1146704	6.43870505	6.68	
ERROR	504	485.85476880	0.96399756		
CORRECTED TOTAL	755	2101.96943920			
SOURCE	DF	ANOVA SS	F VALUE	PR	F
TRANSECT	20	430.34667854	22.32	C.CCC1	
YEAR	1	5.08245546	5.27	C.C221	
TRANSECT*YEAR	20	53.41215041	4.65	C.CCC1	
PCNT#	1	0.86787550	0.90	C.3432	
TRANSECT*PCNT#	20	85.61566572	4.44	C.CCC1	
YEAR*PCNT#	1	6.76270435	7.02	C.CC83	
TRANSECT*YEAR*PCNT#	20	90.65672442	4.70	C.CCC1	
STATION	2	80.92738138	41.97	C.CCC1	
TRANSECT*STATION	40	321.11215544	8.33	C.CCC1	
YEAR*STATION	2	4.55655075	2.36	C.C951	
TRANSECT*YEAR*STATION	40	53.05655552	1.36	C.C662	
PCNT#*STATION	2	3.65642375	1.90	C.1512	
TRANSECT*PCNT#*STATION	40	262.50040035	6.61	C.CCC1	
YEAR*PCNT#*STATION	2	4.15204750	2.17	C.1148	
TRANSECT*YEAR*PCNT#*STATION	40	173.32212242	4.45	C.CC01	
	PR	F	R-SQUARE	C.V.	
	0.0001		0.766657	71.5667	
	RCCT MSE		BLG11 MEAN		
	0.98183377		1.27145277		

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE - BUG12		CHIRONOMIDAE			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	251	24506.42376000	97.22877992	20.01	
ERROR	504	2455.67111524	4.87236492		
CORRECTED TOTAL	755	27406.05487524			
SOURCE	DF	ANOVA SS	F VALUE	PR	F
TRANSECT	20	5562.77972600	56.41	C.CCC1	
YEAR	1	417.08087833	84.09	C.CCC1	
TRANSECT*YEAR	20	1612.28867445	16.26	C.CC01	
PCNT#	1	354.77846252	75.60	C.CCC1	
TRANSECT*PCNT#	20	1271.75548526	12.82	C.CC01	
YEAR*PCNT#	1	1034.85077047	208.65	C.CCC1	
TRANSECT*YEAR*PCNT#	20	1223.25416776	13.44	C.CC01	
STATION	2	1047.25652693	107.58	C.CCC1	
TRANSECT*STATION	40	4121.17475209	20.77	C.CCC1	
YEAR*STATION	2	5.55812155	0.56	C.3714	
TRANSECT*YEAR*STATION	40	1009.81761266	5.09	C.CCC1	
PCNT#*STATION	2	56.62826276	5.71	C.CC35	
TRANSECT*PCNT#*STATION	40	2057.84550142	10.57	C.CCC1	
YEAR*PCNT#*STATION	2	59.40697516	10.02	C.CC01	
TRANSECT*YEAR*PCNT#*STATION	40	841.84372268	4.24	C.CC01	
	PR	F	R-SQUARE	C.V.	
	0.0001		0.908751	31.8651	
	RCCT MSE		BLG12 MEAN		
	2.22703052		6.55552766		

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG12	CAENIS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2337.76560466	9.31382313	14.59
ERROR	504	321.62564558	0.63815406	
CORRECTED TOTAL	755	2659.39525024		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	735.65250573	57.96	C.C001
YEAR	1	2.14728904	3.36	C.C672
TRANSECT*YEAR	20	129.20150044	10.91	C.C001
PCATH	1	6.75614405	10.59	C.C012
TRANSECT*PCATH	20	197.85426056	15.50	C.C001
YEAR*PCATH	1	62.47800432	57.90	C.C001
TRANSECT*YEAR*PCATH	20	100.05672205	7.84	C.C001
STATIC	2	126.23462259	98.98	C.C001
TRANSECT*STATIC	40	265.65580615	14.33	C.C001
YEAR*STATIC	2	2.05000730	1.64	C.1555
TRANSECT*YEAR*STATIC	40	130.08001662	5.10	C.C001
PCATH*STATIC	2	0.24722640	0.19	C.8240
TRANSECT*PCATH*STATIC	40	130.94164022	12.56	C.C001
YEAR*PCATH*STATIC	2	15.26452623	12.04	C.C001
TRANSECT*YEAR*PCATH*STATIC	40	118.82460655	4.66	C.C001
	FR F	R-SQUARE	C.V.	
	0.0001	0.675055	52.7837	
	RCCT MSE		BUG12 MEAN	
	0.79884545		1.51343225	

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG14	PEXAGENIA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	6283.79103163	33.00315152	32.72
ERROR	504	508.37470775	1.00868013	
CORRECTED TOTAL	755	6792.16573938		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	4150.25128446	207.71	C.C001
YEAR	1	45.65467265	45.27	C.C001
TRANSECT*YEAR	20	222.93042325	16.01	C.C001
PCATH	1	148.51604546	147.24	C.C001
TRANSECT*PCATH	20	941.66614125	46.88	C.C001
YEAR*PCATH	1	23.83050114	23.63	C.C001
TRANSECT*YEAR*PCATH	20	1108.28184148	54.54	C.C001
STATIC	2	0.95474111	0.47	C.6232
TRANSECT*STATIC	40	621.84066276	15.41	C.C001
YEAR*STATIC	2	5.00141595	4.46	C.C120
TRANSECT*YEAR*STATIC	40	194.45255427	4.72	C.C001
PCATH*STATIC	2	7.42540554	3.68	C.C259
TRANSECT*PCATH*STATIC	40	255.84611045	8.82	C.C001
YEAR*PCATH*STATIC	2	23.66315504	11.73	C.C001
TRANSECT*YEAR*PCATH*STATIC	40	285.25410420	7.07	C.C001
	FR F	R-SQUARE	C.V.	
	0.0001	0.942175	36.1575	
	RCCT MSE		BUG14 MEAN	
	1.00433069		2.77765853	

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BLG15	CECETIS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	259.47455240	1.15312571	7.35
ERROR	504	81.86900559	0.16243850	
CORRECTED TOTAL	755	341.34355800		
SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	76.15578200	23.44	C.C001
YEAR	1	1.54426789	5.51	C.C022
TRANSECT*YEAR	20	9.53666650	2.54	C.C001
PCNT#	1	0.11515512	0.71	C.C002
TRANSECT*PCNT#	20	16.91737852	5.82	C.C001
YEAR*PCNT#	1	0.07566661	0.47	C.C493
TRANSECT*YEAR*PCNT#	20	10.25467700	3.17	C.C001
STATION	2	21.20272845	65.26	C.C001
TRANSECT*STATION	40	53.39230645	14.37	C.C001
YEAR*STATION	2	2.76556600	8.51	C.C002
TRANSECT*YEAR*STATION	40	15.45413254	2.38	C.C001
PCNT#*STATION	2	0.55219754	1.82	C.C1626
TRANSECT*PCNT#*STATION	40	23.66725512	5.18	C.C001
YEAR*PCNT#*STATION	2	2.10523127	6.48	C.C017
TRANSECT*YEAR*PCNT#*STATION	40	13.61453575	2.10	C.C002
	PR > F	R-SQUARE	C.V.	
	0.0001	0.785314	25.5357	
	RCCT MSE	BLG15 MEAN		
	0.40303660	1.0154253E		

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BLG16	CHLMTCPSYCH		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4122.65155121	16.46570514	13.23
ERROR	504	627.15426521	1.24443307	
CORRECTED TOTAL	755	4749.80581642		
SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	1737.18410382	69.80	C.C001
YEAR	1	10.86505551	8.73	C.C033
TRANSECT*YEAR	20	75.45162714	3.03	C.C001
PCNT#	1	143.54833610	115.25	C.C001
TRANSECT*PCNT#	20	852.65085627	34.26	C.C001
YEAR*PCNT#	1	15.62158224	12.55	C.C004
TRANSECT*YEAR*PCNT#	20	36.68821107	1.55	C.C553
STATION	2	42.82617188	17.61	C.C001
TRANSECT*STATION	40	409.85824525	8.23	C.C001
YEAR*STATION	2	1.38525560	0.56	C.C5735
TRANSECT*YEAR*STATION	40	156.13455250	3.14	C.C001
PCNT#*STATION	2	2.26514550	0.91	C.C4031
TRANSECT*PCNT#*STATION	40	262.27020788	5.27	C.C001
YEAR*PCNT#*STATION	2	3.49021522	1.40	C.C2470
TRANSECT*YEAR*PCNT#*STATION	40	275.61177581	7.63	C.C001
	PR > F	R-SQUARE	C.V.	
	0.0001	0.868239	70.0012	
	RCCT MSE	BLG16 MEAN		
	1.11554160	1.55260235		

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG17	HYCROPSYCHE		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	1525.20162850	6.07609972	8.56
ERROR	504	357.76969620	0.70990059	
CORRECTED TOTAL	755	1883.05172511		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	405.27201552	28.54	C.C001
YEAR	1	16.80200071	22.67	C.C001
TRANSECT*YEAR	20	47.51888102	3.35	C.C001
PCATH	1	85.052000425	115.81	C.C001
TRANSECT*PCATH	20	207.77888956	14.63	C.C001
YEAR*PCATH	1	10.20315720	14.37	C.C002
TRANSECT*YEAR*PCATH	20	73.61634714	5.18	C.C001
STATICA	2	5.03736430	3.55	C.C255
TRANSECT*STATICA	40	247.27177214	8.71	C.C001
YEAR*STATICA	2	5.02640058	3.54	C.C297
TRANSECT*YEAR*STATICA	40	42.12020215	1.48	C.C315
PCATH*STATICA	2	18.24472667	12.85	C.C001
TRANSECT*PCATH*STATICA	40	273.46720038	5.43	C.C001
YEAR*PCATH*STATICA	2	2.63830140	1.86	C.1570
TRANS*YEAR*PCATH*STATICA	40	85.25216557	3.00	C.C001
	PR F	R-SQUARE	C.V.	
	0.0001	0.805555	64.0577	
	RCCT MSE		BLG17 MEAN	
	0.84255598		1.21530006	

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG18	ACARINA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	446.08202252	1.78518734	3.78
ERROR	504	237.96333685	0.47218916	
CORRECTED TOTAL	755	686.06536142		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	104.26542025	11.04	C.C001
YEAR	1	0.00001100	0.01	C.5045
TRANSECT*YEAR	20	17.88804555	1.89	C.C113
PCATH	1	0.06475667	0.14	C.7113
TRANSECT*PCATH	20	27.54111482	2.56	C.C001
YEAR*PCATH	1	2.31007322	4.89	C.C274
TRANSECT*YEAR*PCATH	20	55.96523065	5.53	C.C001
STATICA	2	4.66216657	5.25	C.C055
TRANSECT*STATICA	40	55.14777432	5.25	C.C001
YEAR*STATICA	2	4.05144248	4.25	C.C142
TRANSECT*YEAR*STATICA	40	34.21651175	1.81	C.C022
PCATH*STATICA	2	5.73235234	6.07	C.C025
TRANSECT*PCATH*STATICA	40	44.40755133	2.35	C.C001
YEAR*PCATH*STATICA	2	1.51427092	1.60	C.2022
TRANS*YEAR*PCATH*STATICA	40	45.62835400	2.42	C.C001
	PR F	R-SQUARE	C.V.	
	0.0001	0.653115	54.1366	
	RCCT MSE		BLG18 MEAN	
	0.68716022		1.26526146	

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	DF	SS	MEAN SQUARE	F VALUE
PCCEL	251	970.03300829	3.86467334	6.54
ERRCD	504	257.77022351	0.51144719	
CORRECTED TOTAL	755	1267.80323180		

DEPENDENT VARIABLE	DF	SS	F VALUE	PR	F
TRANSECT	20	255.54261761	25.35	C.C001	
YEAR	1	0.05618556	0.10	C.7538	
TRANSECT*YEAR	20	36.07122263	3.05	C.C001	
PCNT	1	36.17230656	61.22	C.C001	
TRANSECT*PCNT	20	46.56670556	3.57	C.C001	
YEAR*PCNT	1	17.90024632	30.30	C.C001	
TRANSECT*YEAR*PCNT	20	60.53217257	5.16	C.C001	
STATICA	2	65.44145045	72.31	C.C001	
TRANSECT*STATICA	40	157.92268544	6.66	C.C001	
YEAR*STATICA	2	2.06252115	1.75	C.1756	
TRANSECT*YEAR*STATICA	40	62.92202536	3.55	C.C001	
PCNT*STATICA	2	10.16626045	8.61	C.C002	
TRANSECT*PCNT*STATICA	40	72.23247576	3.10	C.C001	
YEAR*PCNT*STATICA	2	5.85341657	8.24	C.C003	
TRANSECT*YEAR*PCNT*STATICA	40	45.77755236	2.11	C.C001	
FR	F	R-SQUARE	C.V.		
		0.0001	0.765129	57.1572	
		PCCT MSE	BLG15 MEAN		
		0.76864439	1.34475028		

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	DF	SS	MEAN SQUARE	F VALUE
PCCEL	251	552.3788750	2.20070856	6.15
ERRCD	504	324.01429121	0.64285550	
CORRECTED TOTAL	755	1316.39316621		

DEPENDENT VARIABLE	DF	SS	F VALUE	PR	F
TRANSECT	20	162.21767235	14.17	C.C001	
YEAR	1	1.55244232	2.48	C.1161	
TRANSECT*YEAR	20	41.67446175	3.24	C.C001	
PCNT	1	25.42827055	25.55	C.C001	
TRANSECT*PCNT	20	54.46474556	4.24	C.C001	
YEAR*PCNT	1	2.41037537	2.75	C.C534	
TRANSECT*YEAR*PCNT	20	55.82631556	4.34	C.C001	
STATICA	2	114.42665753	88.59	C.C001	
TRANSECT*STATICA	40	163.10567347	6.34	C.C001	
YEAR*STATICA	2	0.84526609	0.66	C.5170	
TRANSECT*YEAR*STATICA	40	103.67256765	4.03	C.C001	
PCNT*STATICA	2	19.57462413	12.42	C.C001	
TRANSECT*PCNT*STATICA	40	122.61479226	4.77	C.C001	
YEAR*PCNT*STATICA	2	6.85661656	5.23	C.C051	
TRANSECT*YEAR*PCNT*STATICA	40	101.22610646	3.54	C.C001	
FR	F	R-SQUARE	C.V.		
		0.0001	0.753862	63.7576	
		PCCT MSE	BLG20 MEAN		
		0.80180141	1.25757227		

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG21	AMNICOLA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4685.54265007	18.66505438	9.68
ERROR	504	572.10552743	1.52878001	
CORRECTED TOTAL	755	5257.64817750		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	1664.97446552	42.66	C.C001
YEAR	1	25.25047610	18.28	C.C001
TRANSECT*YEAR	20	311.12672725	6.07	C.C001
PCNT	1	11.24521555	5.83	C.C161
TRANSECT*PCNT	20	155.46463441	5.07	C.C001
YEAR*PCNT	1	6.31555564	3.27	C.C710
TRANSECT*YEAR*PCNT	20	227.27122411	6.15	C.C001
STATION	2	405.25485005	105.07	C.C001
TRANSECT*STATION	40	1135.28357254	14.71	C.C001
YEAR*STATION	2	12.60056623	3.27	C.C389
TRANSECT*YEAR*STATION	40	286.08864051	3.71	C.C001
PCNT*STATION	2	3.46540213	C.50	C.4079
TRANSECT*PCNT*STATION	40	214.46856441	2.78	C.C001
YEAR*PCNT*STATION	2	11.41515215	2.56	C.C528
TRANSECT*YEAR*PCNT*STATION	40	135.64563062	1.76	C.C035
	FR F	R-SQUARE	C.V.	
	0.0001	0.828151	50.2404	
	RCCT MSE		BUG21 MEAN	
	1.38880553		2.76432100	

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG22	ELIMIA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2023.25675225	8.06134164	9.26
ERROR	504	438.64171017	C.87032005	
CORRECTED TOTAL	755	2462.00846242		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	712.51055461	40.56	C.C001
YEAR	1	1.00114195	1.15	C.2840
TRANSECT*YEAR	20	64.04760243	3.68	C.C001
PCNT	1	20.45306262	23.50	C.C001
TRANSECT*PCNT	20	148.32381657	8.52	C.C001
YEAR*PCNT	1	8.81170001	10.12	C.C016
TRANSECT*YEAR*PCNT	20	118.71571145	6.82	C.C001
STATION	2	26.51505087	15.23	C.C001
TRANSECT*STATION	40	568.17520056	16.32	C.C001
YEAR*STATION	2	7.01414131	4.03	C.C184
TRANSECT*YEAR*STATION	40	58.00608537	2.82	C.C001
PCNT*STATION	2	2.48202355	1.43	C.2411
TRANSECT*PCNT*STATION	40	55.65165245	2.86	C.C001
YEAR*PCNT*STATION	2	8.25782667	4.74	C.C091
TRANSECT*YEAR*PCNT*STATION	40	128.56567433	3.55	C.C001
	FR F	R-SQUARE	C.V.	
	0.0001	0.821838	50.5101	
	RCCT MSE		BUG22 MEAN	
	0.93290988		1.84657720	

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG23	SP-AMERICA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	3624.43461267	14.43557854	7.87
ERROR	504	924.19693441	1.83371217	
CORRECTED TOTAL	755	4548.63154708		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	1132.45569091	30.91	C.CCC1
YEAR	1	2.89218151	1.58	C.2097
TRANSECT*YEAR	20	244.55262013	6.68	C.CCC1
PCNT	1	11.11256680	6.66	C.C142
TRANSECT*PCNT	20	213.63740268	5.83	C.CCC1
YEAR*PCNT	1	80.89129188	44.11	C.CCC1
TRANSECT*YEAR*PCNT	20	177.26234685	4.84	C.CCC1
STATION	2	75.01668045	20.45	C.CCC1
TRANSECT*STATION	40	1049.82687102	14.21	C.CCC1
YEAR*STATION	2	7.46546811	2.04	C.1317
TRANSECT*YEAR*STATION	40	148.69273243	2.03	C.CCC3
PCNT*STATION	2	10.73222153	2.93	C.C545
TRANSECT*PCNT*STATION	40	237.31225170	3.24	C.CCC1
YEAR*PCNT*STATION	2	32.82215115	5.23	C.CCC1
TRANSECT*YEAR*PCNT*STATION	40	157.20658588	2.65	C.CCC1
	FR F	R-SQUARE	C.V.	
	0.0001	0.756820	38.6017	
	RCCT MSE		BLG23 MEAN	
	1.35414629		2.50755813	

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	BUG24	ISOPCCA		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	499.83519624	1.99139122	7.76
ERROR	504	126.39669913	0.25074543	
CORRECTED TOTAL	755	626.23189537		
SOURCE	DF	ANOVA SS	F VALUE	PR F
TRANSECT	20	102.06292717	15.88	C.CCC1
YEAR	1	2.92130412	11.50	C.CCC8
TRANSECT*YEAR	20	18.94338580	2.69	C.CCC1
PCNT	1	0.93242594	2.07	C.1505
TRANSECT*PCNT	20	39.42044503	6.90	C.CCC1
YEAR*PCNT	1	0.05704668	0.22	C.6376
TRANSECT*YEAR*PCNT	20	40.47184540	7.88	C.CCC1
STATION	2	26.52305618	57.51	C.CCC1
TRANSECT*STATION	40	111.81134503	10.85	C.CCC1
YEAR*STATION	2	1.46343021	2.91	C.C555
TRANSECT*YEAR*STATION	40	15.11022552	1.47	C.C344
PCNT*STATION	2	0.06386128	1.18	C.3094
TRANSECT*PCNT*STATION	40	57.56343766	5.61	C.CCC1
YEAR*PCNT*STATION	2	1.08218551	2.11	C.1226
TRANSECT*YEAR*PCNT*STATION	40	82.20219642	6.00	C.CCC1
	FR F	R-SQUARE	C.V.	
	0.0001	0.754355	54.4466	
	RCCT MSE		BLG24 MEAN	
	0.50670054		0.53061748	

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE **EICMASS**

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	1237.25616613	4.92946681	4.17
ERROR	504	556.92677261	1.10315201	
CORRECTED TOTAL	755	1633.62454054		

SOURCE	DF	ANOVA SS	F VALUE	PR	F
YEAR	1	1.54715265	1.21	C.2534	
PCNT	1	0.24415222	0.21	C.6498	
PCNT*YEAR	1	25.45536342	21.51	C.0001	
TRANSECT	20	360.62215504	15.24	C.0001	
TRANSECT*YEAR	20	45.52679092	1.52	C.0095	
TRANSECT*PCNT	20	45.25370004	1.51	C.0101	
TRANSECT*PCNT*YEAR	20	71.21452662	3.01	C.0001	
STATIC	2	66.83628375	28.12	C.0001	
STATIC*YEAR	2	12.54701508	5.30	C.0053	
STATIC*PCNT	2	3.21645865	1.36	C.2578	
STATIC*PCNT*YEAR	2	1.72555455	0.73	C.4820	
TRANSECT*STATIC	40	165.56736031	4.01	C.0001	
TRANSECT*STATIC*YEAR	40	105.37661255	2.23	C.0001	
TRANSECT*STATIC*PCNT	40	77.84662555	1.64	C.0091	
TRANS*STAT*PCNT*YEAR	40	220.71106161	4.66	C.0001	

FR F R-SQUARE C.V.

0.0001 0.674781 102.0015

ROOT MSE EICMASS MEAN

1.08774630 1.04791016

APPENDIX I

Aquatic Macrophyte Sampling Locations

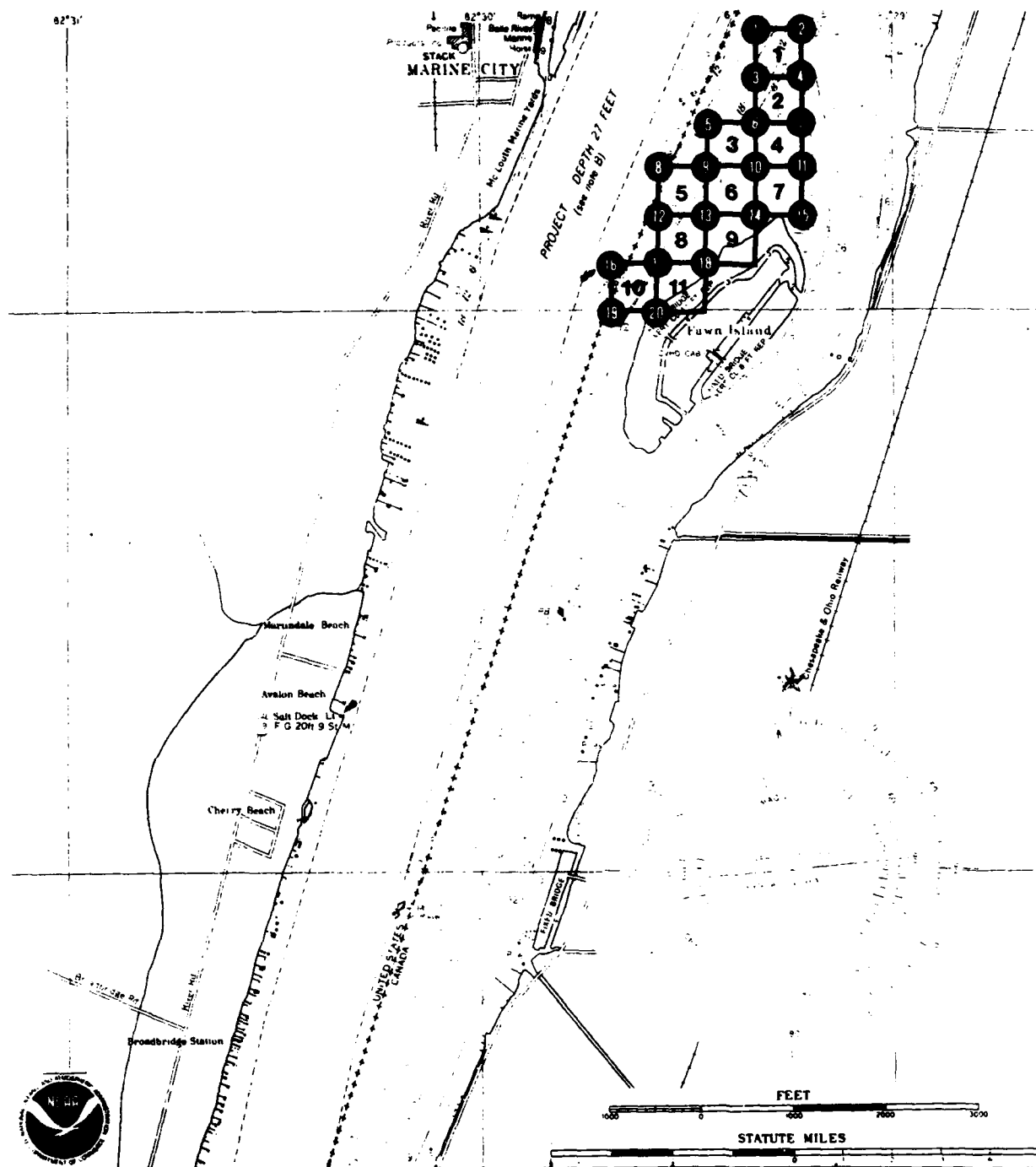
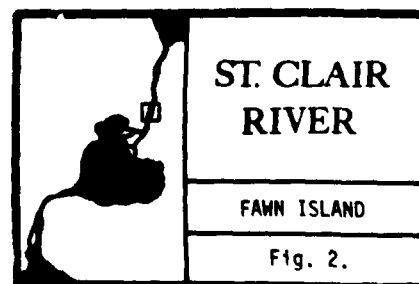


Fig. 2. Fawn Island is in the St. Clair River about 13 miles downstream from Stag Island. The starting point for the grid network is located on the island's west side, at the northernmost entrance to the inner island canals. The first grid intersection (buoy number 15) is at the junction of a line across the northern tip of the island and a 4° north compass sighting taken from the set point. Buoy number 15 is positioned the first grid line (grid intersects 11, 7, 4, and 2) is established, running 2500 feet at 4° north from the set point. The second grid line (intersects 14, 13, and 12) is 1500 feet long, and is sighted off buoy number 15, at 276° west. All other grid points were set by using these two initial lines as markers.



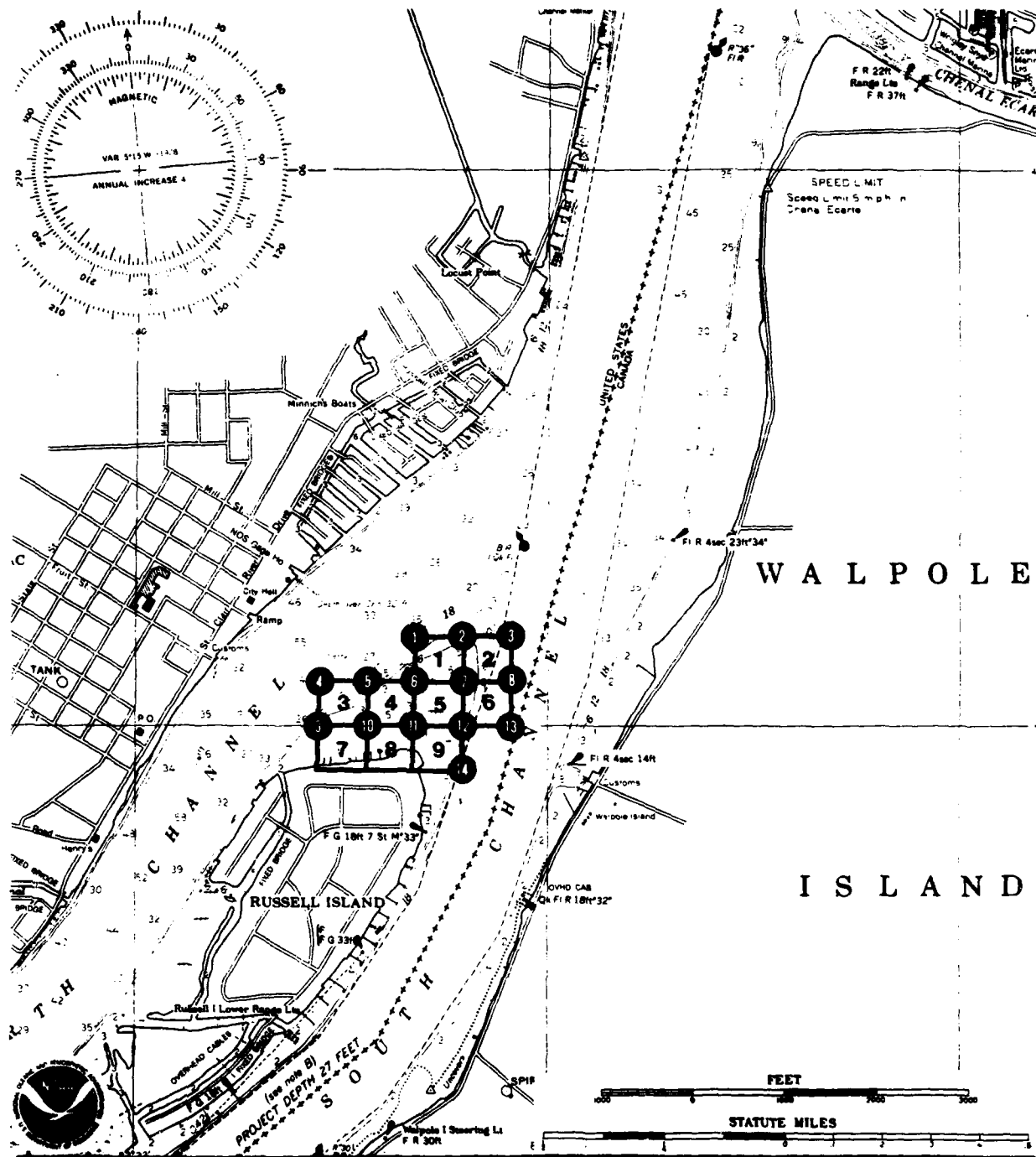
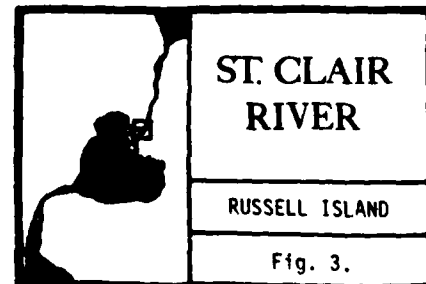


Fig. 3. Russell Island is in the St. Clair River about 5.5 miles downstream from Fawn Island. The starting point for the grid network is a U.S. Geological Survey stake located at the northeastern point of the island. The first buoy (number 11) is 200 feet offshore in the line with the survey stake and 4° north. From this buoy the first grid line (intersects 6 and 1) is set at a heading of 4° north. The second grid line is evenly divided by buoy number 11. The western half of this grid line (intersects 9 and 10) is set at 276° west from buoy 11. The rest of the grid line (intersects 12 and 13) is set at 96° east.



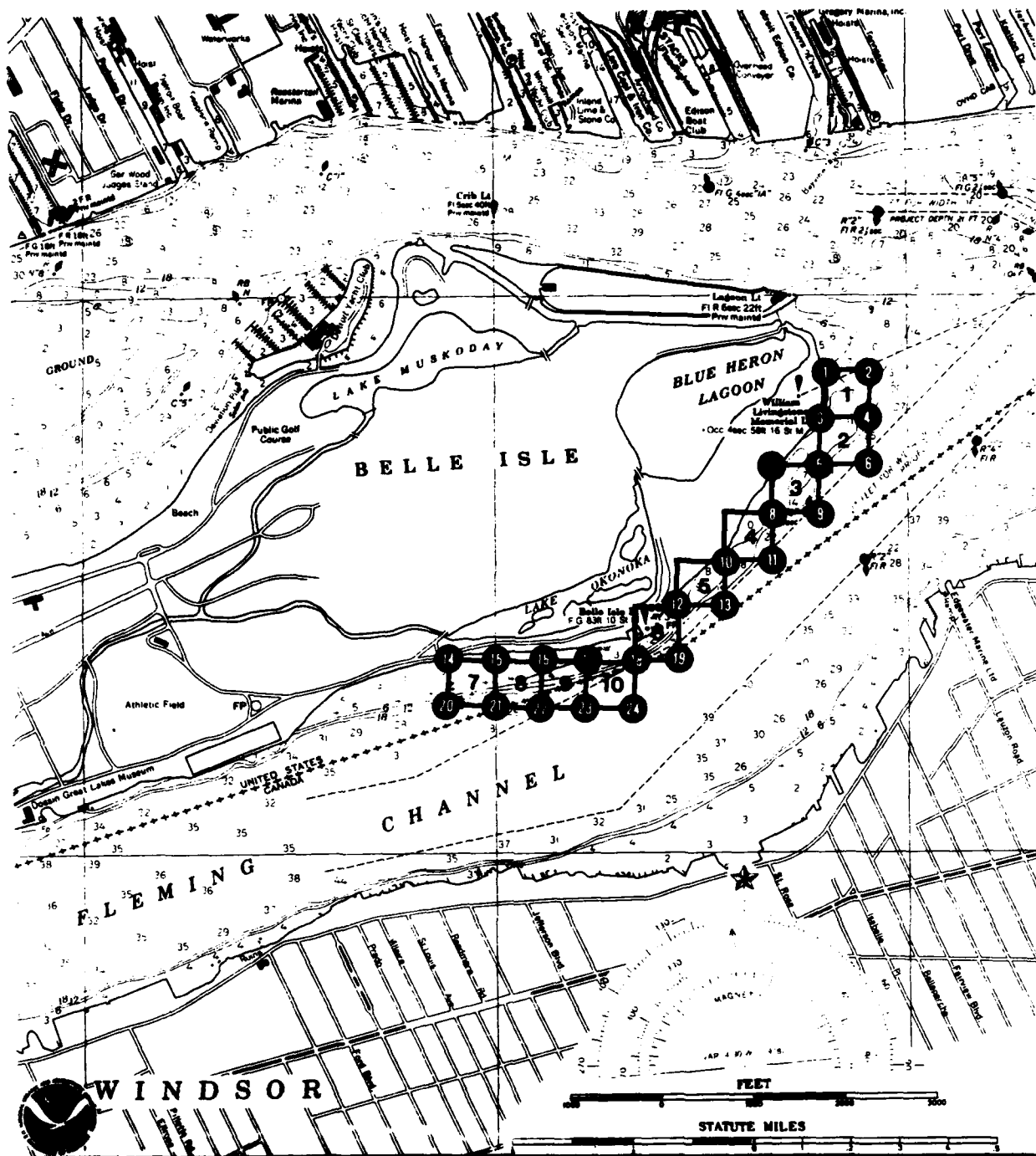
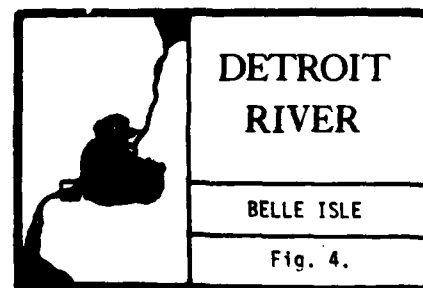


Fig. 4. Belle Isle is at the head of the Detroit River. The starting point for the grid network is the entrance onto the Michigan DNR fishing pier just west of the Belle Isle Coast Guard Station at grid intersect number 17. Grid intersects 1, 3, 7, 10, 12, 14, 15, 16, and 18 were located from shore with a steel tape. All other grid points were located by boat by sighting from shore at a compass reading of 184°S.



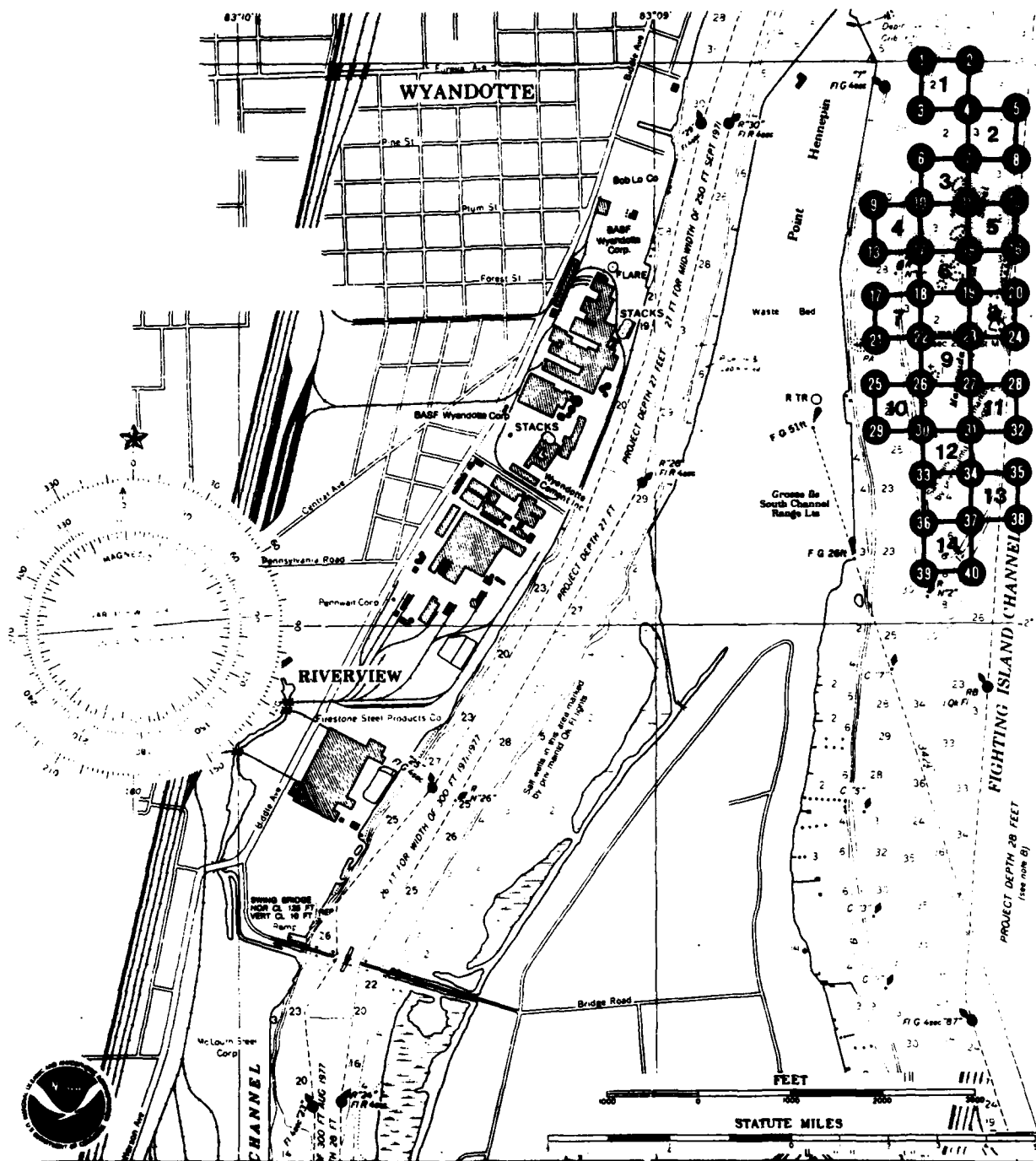
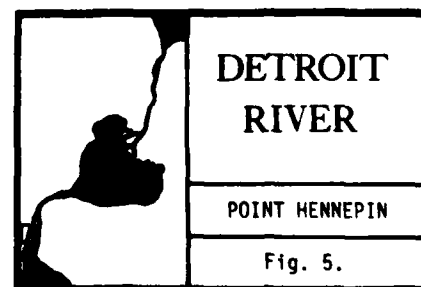


Fig. 5. Point Hennepin is in the Detroit River about 12.6 miles downstream from Belle Isle. The grid was set along the northeast side of Point Hennepin in the Mamajuda Shoals area. The starting point for setting the was the southeast corner of the Mamajuda light. Grid intersect number 23 was set 100 feet north and 250 feet east of this corner. From this grid intersection the first line (intersects 19, 15, 11, 7, 4, and 2) was placed running 3000 feet at 4°N. The lower half of this line (intersects 27, 31, 34, 37, and 40) ran 2500 feet at 184°S. The east-west lines were set from shore on a compass bearing of 94°E based on shore measurements north and south of the Grosse Ile South Channel Range Light (FG 51 ft.).



APPENDIX J

Grapnel Collections of Submersed Macrophytes

Submersed Macrophyte Grapnel Data. JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR STAG									
		1	309033 497382	14.0	No Plants Present			1600 850	-
		2	309024 497381	12.0	No Plants Present			3500 2400	2.5 1.3
		3	309041 497386	32.0	No Plants Present			3400 1400	-
		4	309034 497386	15.0	No Plants Present			4000 2500	2.7 2.5
		5	309024 497387	8.0	No Plants Present			3000 2600	2.6 2.3
		6	309043 497392	24.0	No Plants Present			2400 1400	-
		7	309036 497392	13.0	No Plants Present			4100 2100	2.1 1.7
		8	309025 497391	4.0	No Plants Present			3400 2900	2.6 2.5
		9	309051 497395	32.0	No Plants Present			4000 1100	-
		10	309040 497397	13.0	No Plants Present			4200 2100	1.7 1.5
		11	309027 497395	2.0	No Plants Present			4100 4000	2.0 2.0
		12	309054 497404	20.0	No Plants Present			3800 2100	2.0 1.0
		13	309042 497403	10.0	MYRIO. SPICATUM CHARA SPP. ELODEA CANADENS	98 1 1	4500	4000 2100	1.5 0.6
		14	309034 497399	2.0	No Plants Present			4200 4100	0.6 0.2
		15	309056 497408	20.0	No Plants Present			4000 1300	2.2 2.2
		16	309057 497410	18.0	POT. NARROW CHARA SPP. NITELLA HYALINA	50 25 25	10	4100 2100	2.5 2.4
		17	309045 497410	16.0	MYRIO. SPICATUM	100	1800	4100 720	0.6 0.3
		18	309037 497406	2.0	No Plants Present			4000 3900	0.3 0.3
		19	309062 497413	23.0	CHARA SPP. POT. NARROW	70 30	5	4100 1700	2.4 2.1
		20	309057 497416	14.0	POT. CRISPUS POT. GRAMINEUS CHARA SPP. ELODEA CANADENS	97 1 1 1	80	4000 1700	1.0 0.3
		21	309049 497414	3.0	POT. NARROW ELODEA CANADENS CHARA SPP.	95 4 1	50	4500 4100	0.3 0.3

	22	308075	497423	31.0	No Plants Present				2600	1100	-	-
	23	308068	497421	9.0	POT . NARROW	100	10	4100	2400	1.3	1.0	1.0
	24	308080	497427	33.0	No Plants Present				3200	1300	-	-
	25	308075	497427	5.0	No Plants Present				4000	3000	1.9	1.8
	26	308085	497434	34.0	No Plants Present				3000	1200	-	-

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR FAWN									
		1	309573 498255	8.5	POT. GRAMINEUS	100	160	1600	110
		2	309566 498255	15.0	CHARA SPP.	100	5	2000	1300
		3	309592 498252	13.0	POT. NARROW CHARA SPP.	85 10	180	1900	850
					ELODEA CANADENSIS	5			0.9
		4	309570 498259	15.0	CHARA SPP.	100	10	2100	1200
		5	309602 498257	36.0	CHARA SPP.	100	5	2000	800
		6	309593 498258	24.0	CHARA SPP.	100	5	2100	980
		7	309572 498263	12.0	POT. GRAMINEUS CHARA SPP.	60 40	20	2000	1000
		8	309603 498265	24.0	No Plants Present			450	310
		9	309604 498261	21.0	No Plants Present			1900	630
		10	309595 498264	9.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	60 25 15	10	2000	870
		11	309575 498266	6.0	CHARA SPP. POT. GRAMINEUS	70 30	20	2400	950
		12	309610 498268	27.5	No Plants Present			830	300
		13	309604 498269	28.0	No Plants Present			1800	860
		14	309594 498272	2.0	CHARA SPP.	100	5	2000	1500
		15	309578 498274	4.0	CHARA SPP. POT. NARROW	80 20	20	2400	1700
		16	309633 498287	36.0	No Plants Present			1500	420
		17	309622 498283	30.0	No Plants Present			2000	830
		18	309604 498273	2.0	No Plants Present			2000	1400
		19	309626 498280	34.0	No Plants Present			1500	430
		20	309622 498287	4.0	CHARA SPP. POT. GRAMINEUS	90 10	5	2100	1500

Submersed Macrophyte Grapnel Data. JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	BELLE	1	312760 499947	4.0	POT. NARROW	50	320	3500	43
					POT. RICHARDSONI	45			
					POT. CRISPUS	3			
					MYRIO. SPICATUM	1			
					ELODEA CANADENS	1			
2		312753 499945		6.0	POT. RICHARDSONI	99	80	3700	66
					CHARA SPP.	1			
3		312772 499961		7.0	POT. CRISPUS	90	620	3500	360
					POT. RICHARDSONI	9			
					POT. NARROW	1			
4		312753 499951		13.0	No Plants Present			3600	15
5		312773 499964		15.0	No Plants Present			3400	36
6		312751 499957		30.0	No Plants Present			3900	6
7		312779 499968		8.0	POT. CRISPUS	80	140	2500	150
					POT. NARROW	15			
					CHARA SPP.	5			
8		312781 499969		18.5	No Plants Present			3700	14
9		312770 499967		34.5	No Plants Present			3600	15
10		312790 499975		12.0	No Plants Present			3400	20
11		312777 499973		35.0	No Plants Present			3600	13
12		312803 499983		7.5	POT. RICHARDSONI	80	40	3400	15
					CHARA SPP.	15			
					POT. NARROW	5			
13		312786 499978		34.0	No Plants Present			3500	22
14		312859 499995		3.0	CHARA SPP.	95	5	3000	1600
15		312848 499993		3.5	CHARA SPP.	75	20	3700	1000
					VALLISNERIA AMER	25			
16		312838 499994		4.0	CHARA SPP.	85	60	3700	320
					VALLISNERIA AMER	15			
17		312828 499993		2.0	CHARA SPP.	100	330	3400	410
18		312813 499988		6.0	CHARA SPP.	100	5	3400	12
19		312801 499987		24.0	No Plants Present			2500	15

21	312849 499999	16.0	No Plants Present	3700	7	-
22	312840 499998	13.5	No Plants Present	3700	15	-
23	312830 499997	33.0	No Plants Present	3600	18	-
24	312814 499993	34.0	No Plants Present	3200	15	-

Submersed Macrophyte Grabnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	HENNEPIN	1	314077 500675	31.0	No Plants Present			3300	360 0.9 0.8
		2	314065 500673	5.0	POT. NARROW	100	80	3500	1400 0.2 0.0
		3	314079 500680	24.0	No Plants Present			3500	360 0.8 0.7
		4	314070 500679	4.0	POT. NARROW	100	120	3100	1700 0.2 0.1
		5	314063 500678	8.0	POT. RICHARDSONI	100	80	3000	850 0.7 0.4
		6	314081 500685	6.0	POT. NARROW	100	70	3300	1800 0.7 0.3
		7	314073 500684	6.0	POT. NARROW	100	180	3200	1100 0.2 0.1
		8	314065 500684	9.0	POT. RICHARDSONI POT. NARROW	90 10	5	3000	550 0.9 0.7
		9	314096 500694	33.0	No Plants Present			3200	480 1.1 0.8
		10	314087 500692	7.0	POT. NARROW NITELLA HYALINA	90 10	100	3300	1100 0.1 0.1
		11	314076 500690	6.0	POT. NARROW	100	10	3800	1100 0.4 0.3
		12	314066 500691	31.0	No Plants Present			3500	600 1.5 1.3
		13	314096 500696	34.0	No Plants Present			3400	510 1.4 0.9
		14	314089 500693	7.0	NITELLA HYALINA POT. NARROW	60 40	60	3300	1600 0.2 0.1
		15	314080 500697	4.0	POT. NARROW NITELLA HYALINA	65 35	30	3600	1800 0.5 0.2
		16	314671 500698	28.0	No Plants Present			3500	320 1.0 0.7
		17	314101 500705	32.0	No Plants Present			3400	570 0.7 0.1
		18	314093 500704	7.0	NITELLA HYALINA	100	65	3100	1300 0.3 0.2
		19	314082 500702	6.0	NITELLA HYALINA POT. NARROW	60 40	60	4400	2100 0.0 0.0
		20	314074 500703	27.0	No Plants Present			3000	660 0.9 0.3
		21	314104 500711	31.0	No Plants Present			3200	480 1.4 0.6
		22	314095 500710	5.0	POT. NARROW	100	10	3000	1800 0.3 0.2
		23	314086 500709	5.0	POT. NARROW	100	60	3500	2000 0.6 0.4
		24	314077 500709	34.0	No Plants Present			3300	450 1.0 1.0

25	314107 500719	31.0	No Plants Present				3500	440	0.7	0.3
26	314100 500718	7.0	POT. NARROW	70	110	3000	1300	0.2	0.2	0.2
			NITELLA HYALINA	29						
			MYRIO. EXALBESC	1						
27	314090 500716	4.0	POT. NARROW	85	200	3400	1100	0.2	0.2	0.0
			POT. CRISPUS	15						
28	314082 500715	32.0	No Plants Present			3600	500	1.2	0.5	0.5
29	314108 500723	29.0	No Plants Present			3300	380	1.8	0.5	0.5
30	314104 500725	6.0	POT. NARROW	80	205	3000	1200	0.2	0.2	0.1
			NITELLA HYALINA	20						
31	314093 500722	6.0	POT. NARROW	80	160	3500	1400	0.3	0.3	0.1
			NITELLA HYALINA	20						
32	314085 500725	34.0	No Plants Present			3300	830	0.9	0.8	0.8
33	314107 500733	9.0	POT. NARROW	100	55	3400	1100	0.1	0.1	0.1
34	314097 500731	12.0	POT. NARROW	100	10	3600	500	0.8	0.6	0.6
35	314089 500730	33.0	No Plants Present			3600	590	1.0	0.8	0.8
36	314110 500741	9.0	POT. NARROW	98	25	3000	870	0.5	0.5	0.2
			VALLISNERIA AMER	2						
37	314102 500739	37.0	No Plants Present			3600	740	0.7	0.6	0.6
38	314096 500740	32.0	No Plants Present			3400	950	1.5	1.1	1.1
39	314111 500745	13.0	No Plants Present			2800	270	0.6	0.3	0.3
40	314110 500752	34.0	No Plants Present			3700	830	1.1	0.9	0.9

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) Indicates missing data
2. (*) Indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	STONEY	1	314229 500974	9.0	POT. NARROW	100	100	4100	510 1.3 1.0
		2	314216 500973	9.0	POT. NARROW	100	80	3900	660 0.8 0.4
		3	314205 500974	8.0	POT. NARROW	100	30	4300	1100 0.8 0.5
		4	314193 500973	8.8	MYRIO. SPICATUM POT. NARROW	60 40	20	4000	750 0.4 0.1
		5	314183 500972	17.0	No Plants Present			4000	310 0.8 0.6
		6	314236 500982	12.0	POT. NARROW	100	40	3800	190 1.2 0.8
		7	314222 500982	7.0	POT. NARROW	100	100	3600	340 1.4 0.7
		8	314212 500981	4.0	VALLISNERIA AMER POT. NARROW POT. CRISPUS	45 45 10	5	3500	2000 0.4 0.1
		9	314199 500980	3.0	No Plants Present			4000	500 0.0 0.0
		10	314189 500979	10.0	No Plants Present			4000	410 0.2 0.1
		11	314244 500992	10.0	No Plants Present			4200	530 1.7 1.1
		12	314232 500991	4.0	POT. CRISPUS	100	2500	3500	130 0.0 0.0
		13	314220 500991	3.0	POT. CRISPUS	100	2700	3500	15 0.0 0.0
		14	314264 501004	11.0	No Plants Present			3100	360 2.6 2.0
		15	314252 501000	7.0	No Plants Present			4100	830 1.8 1.6
		16	314241 500999	2.0	POT. CRISPUS	100	80	3600	2100 0.8 0.8
		17	314229 500999	0.5	TYPHA ANGUSTIFOL	100	*	3500	3400 0.2 0.0
		18	314273 501012	10.0	No Plants Present			3600	300 2.4 0.7
		19	314201 501010	6.0	No Plants Present			3000	650 2.1 0.7
		20	314279 501020	8.0	No Plants Present			3500	400 2.5 1.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR STAG		1	308034 497381	14.0	No Plants Present			1000	400 2.9 2.7
		2	308019 497380	15.0	No Plants Present			1100	900 2.6 2.4
		3	308042 497382	32.0	No Plants Present			500	200 2.1 2.0
		4	308036 497386	15.0	No Plants Present			1000	600 2.9 2.8
		5	308021 497384	15.0	No Plants Present			1000	700 2.4 2.0
		6	308046 497389	24.0	No Plants Present			400	200 2.8 2.6
		7	308037 497391	14.6	No Plants Present			1000	900 1.9 1.6
		8	308024 497390	6.0	No Plants Present			800	500 2.6 2.4
		9	308056 497396	22.0	No Plants Present			500	100 1.9 1.6
		10	308038 497397	12.2	No Plants Present			900	300 1.9 1.7
		11	308026 497395	3.1	CHARA SPP.	100	*	700	500 1.4 1.1
		12	308053 497395	20.0	No Plants Present			500	200 2.4 2.2
		13	308042 497404	15.0	ELODEA CANADENSIS POT. NARROW NITELLA HYALINA	90 5 5	20	900	500 0.5 0.5
		14	308037 497405	2.0	POT. CRISPUS POT. RICHARDSONI ELODEA CANADENSIS NITELLA HYALINA	80 17 2 1	3700	4000	90 0.2 0.2
		15	308070 497404	20.0	No Plants Present			500	200 2.1 2.0
		16	308053 497405	18.0	No Plants Present			650	200 2.3 2.1
		17	308046 497412	15.0	ELODEA CANADENSIS POT. RICHARDSONI MYRIO. SPICATUM	60 35 5	1150	500	100 0.6 0.5
		18	308041 497411	4.5	CHARA SPP. POT. CRISPUS POT. NARROW	85 10 5	400	440	2800 0.4 0.3
		19	308071 497409	23.0	No Plants Present			500	200 1.9 1.8
		20	308055 497412	15.0	POT. RICHARDSONI CHARA SPP.	50 50	20	600	200 0.7 0.5
		21	308046 497413	3.4	CHARA SPP. POT. RICHARDSONI	95 4	140	500	180 0.5 0.4

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (+) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR FAWN									
		1	309573 498243	12.0	No Plants Present			2000	340 2.4 2.1
		2	309566 498247	12.0	POT. NARROW	100	*	2300	440 1.1 0.5
		3	309580 498253	12.0	CHARA SPP.	100	5	2500	350 2.9 1.8
		4	309568 498253	12.0	POT. NARROW	100	340	2500	1000 1.1 0.3
		5	309592 498250	24.0	No Plants Present			2800	500 1.9 1.1
		6	309584 498259	9.1	ELODEA CANADENSIS POT. RICHARDSONI	50 50	660	2200	450 0.2 0.0
		7	309573 498259	8.7	POT. GRAMINEUS CHARA SPP.	95 5	80	3200	1600 1.0 0.7
		8	309619 498263	34.0	No Plants Present			3000	500 2.0 1.4
		9	309600 498263	12.0	CHARA SPP.	100	5	2400	900 2.4 2.3
		10	309587 498265	4.5	CHARA SPP. POT. NARROW	95 5	20	2200	700 1.0 0.4
		11	309576 498265	5.1	CHARA SPP.	100	40	3300	2000 0.5 0.2
		12	309623 498271	28.0	No Plants Present			2700	600 2.5 2.2
		13	309602 498270	6.2	POT. GRAMINEUS CHARA SPP.	80 10	40	2000	980 1.0 0.5
		14	309590 498269	3.0	CHARA SPP.	100	10	2200	1800 0.6 0.6
		15	309582 498263	4.0	CHARA SPP.	100	10	2500	2300 0.8 0.3
		16	309643 498284	36.0	No Plants Present			3000	200 3.0 2.4
		17	309622 498280	14.0	No Plants Present			2700	800 2.5 1.8
		18	309606 498278	2.5	CHARA SPP.	100	10	1900	1600 0.5 0.3
		19	309629 498284	33.0	No Plants Present			3000	500 2.5 2.0
		20	309620 498285	5.9	CHARA SPP.	100	10	2500	1100 0.9 0.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

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2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES		DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles)		CURRENT (Ft./Sec.)	
			Upper	Lower					Surface	Bottom	Surface	Bottom
ST. CLAIR RUSSELL		1	309951	498651	32.0	No Plants Present			2500	120	3.8	1.1
		2	309943	498649	24.0	No Plants Present			2800	180	3.5	2.8
		3	309927	498650	31.0	No Plants Present			2800	260	2.2	1.3
		4	309983	498658	52.0	No Plants Present			3800	150	2.6	1.9
		5	309969	498657	34.0	No Plants Present			3400	280	2.6	2.2
		6	309952	498656	13.0	CHARA SPP.	100	5	3500	1200	3.2	3.1
		7	309944	498655	8.0	POT. GRAMINEUS CHARA SPP.	75 25	1100	3400	1400	2.7	2.6
		8	309929	498654	32.0	No Plants Present			3300	1500	2.7	2.3
		9	309987	498663	40.0	No Plants Present			3300	240	3.3	0.3
		10	309973	498662	11.0	ELODEA CANADENSIS POT. RICHARDSONI	90 10	1020	3400	410	1.6	0.3
		11	309954	498662	4.0	CHARA SPP.	100	10	3500	1400	2.8	0.2
		12	309943	498662	6.0	CHARA SPP. POT. GRAMINEUS	50 50	20	3400	510	2.2	0.6
		13	309925	498660	33.0	No Plants Present			3700	710	2.0	1.8
		14	309953	498670	5.0	POT. GRAMINEUS CHARA SPP.	80 20	550	3400	210	2.0	1.7

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	BELLE	1	312760 499950	4.0	POT. ZOSTERIFORM VALLISNERIA AMER MYRIO. SPICATUM	80 19 1	180	4500 600	0.6 0.4
		2	312754 499950	12.0	POT. NARROW	100	20	4600 750	2.0 0.3
		3	312766 499959	9.0	VALLISNERIA AMER POT. NARROW CHARA SPP.	50 45 5	50	4500 500	0.1 0.1
		4	312757 499957	24.0	No Plants Present			4700 150	2.5 2.0
		5	312772 499967	15.0	No Plants Present			3200 130	2.6 1.8
		6	312759 499962	30.0	No Plants Present			3300 100	2.8 2.2
		7	312779 499966	2.0	POT. RICHARDSONI POT. NARROW POT. CRISPUS VALLISNERIA AMER CHARA SPP.	80 8 5 5 2	1350	4500 3500	0.2 0.2
		8	312781 499971	18.5	No Plants Present			3000 130	2.6 1.9
		9	312774 499973	35.0	No Plants Present			3000 110	2.7 2.0
		10	312796 499978	3.0	CHARA SPP.	100	10	4600 900	0.2 0.2
		11	312779 499974	35.0	No Plants Present			3100 130	2.8 2.0
		12	312807 499985	10.0	POT. GRAMINEUS CHARA SPP. VALLISNERIA AMER NITELLOP. OBTUSA NAJAS FLEXILIS	60 38 2 <1 <1	70	4900 500	1.2 0.9
		13	312795 499982	34.0	No Plants Present			3300 120	2.3 1.4
		14	312857 499995	2.5	CHARA SPP. NITELLOP. OBTUSA	96 2	60	4300 4000	0.2 0.2
		15	312849 499994	2.0	CHARA SPP. NITELLOP. OBTUSA VALLISNERIA AMER MYRIO. SPICATUM	55 15 15 15	20	4000 3100	0.2 0.2
		16	312839 499993	3.0	CHARA SPP. VALLISNERIA AMER NITELLOP. OBTUSA NAJAS FLEXILIS POT. ZOSTERIFORM	90 5 3 2 <1	250	4300 2500	0.3 0.3

17	312829 499993	1.5	CHARA SPP.	100	110	4600	3600	0.3	0.3
18	312822 499991	12.0	POT. RICHARDSONI	45	440	5000	150	1.1	0.8
			POT. GRAMINEUS	45					
			CHARA SPP.	5					
			VALLISNERIA AMER	5					
			POT. ZOSTERIFORM	<1					
			POT. NARROW	<1					
19	312806 499989	26.0	No Plants Present			3900	120	2.0	1.4
20	312859 500002	26.0	No Plants Present			3400	160	1.6	1.5
21	312851 500000	25.0	No Plants Present			3400	200	1.6	1.6
22	312839 499997	33.0	No Plants Present			3700	200	1.7	1.5
23	312829 499986	32.0	No Plants Present			4300	200	2.1	2.0
24	312823 499996	34.0	No Plants Present			4200	220	2.8	2.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	HENNEPIN	1	314072 500666	31.0	No Plants Present			2700 120	0.5 0.5
		2	314059 500666	7.0	VALLISNERIA AMER POT. NARROW	70 30	1040	3800 100	0.1 0.1
		3	314079 500675	33.0	No Plants Present			1200 32	0.6 0.3
		4	314063 500673	8.0	POT. NARROW VALLISNERIA AMER	90 10	1210	3800 270	0.3 0.1
		5	314050 500669	32.0	No Plants Present			3400 130	2.2 2.0
		6	314079 500680	10.0	VALLISNERIA AMER	100	120	5100 830	0.4 0.2
		7	314068 500679	7.0	POT. NARROW	100	1320	4000 240	0.2 0.1
		8	314054 500677	31.0	No Plants Present			4300 180	2.0 1.6
		9	314084 500689	30.0	No Plants Present			3600 110	1.3 0.5
		10	314082 500687	10.0	VALLISNERIA AMER	100	160	4700 270	0.2 0.2
		11	314072 500685	6.0	VALLISNERIA AMER	100	140	4000 230	0.3 0.2
		12	314060 500684	31.0	No Plants Present			1500 50	2.1 1.6
		13	314100 500696	29.0	No Plants Present			4200 9	0.9 0.8
		14	314086 500693	11.0	VALLISNERIA AMER NITELLOP. OBTUSA	60 40	40	1900 800	0.5 0.4
		15	314076 500692	6.5	VALLISNERIA AMER	100	60	4500 400	0.4 0.3
		16	314066 500690	31.0	No Plants Present			4700 170	1.6 1.2
		17	314105 500702	25.0	No Plants Present			4000 100	1.3 0.5
		18	314091 500700	11.0	VALLISNERIA AMER	100	100	5000 1000	0.1 0.1
		19	314081 500699	5.5	VALLISNERIA AMER CHARA SPP.	75 25	40	4800 100	0.1 0.1
		20	314070 500697	30.0	No Plants Present			4600 130	1.6 1.5
		21	314108 500709	27.0	No Plants Present			4200 110	1.1 1.0
		22	314095 500707	11.0	VALLISNERIA AMER POT. NARROW	90 10	40	5100 360	0.6 0.4
		23	314084 500706	5.0	VALLISNERIA AMER CHARA SPP.	98 2	180	4000 110	0.3 0.2

24	314074	500705	30.0	No Plants Present			4000	180	1.9	1.9
25	314112	500715	23.0	No Plants Present			3900	100	1.0	0.8
26	314089	500714	15.0	VALLISNERIA AMER	100	40	4300	100	0.3	0.2
27	314089	500712	6.0	VALLISNERIA AMER CHARA SPP.	90 10	20	3900	220	0.4	0.2
28	314078	500711	31.0	No Plants Present			4800	190	2.0	2.0
29	314114	500721	24.0	No Plants Present			3800	9	1.1	0.4
30	314102	500719	13.0	CHARA SPP. VALLISNERIA AMER	80 20	60	4800	320	0.4	0.1
31	314084	500719	7.0	VALLISNERIA AMER MYRIO. SPICATUM	98 2	80	3500	150	0.3	0.2
32	314082	500719	31.0	No Plants Present			1500	50	2.4	2.0
33	314107	500727	22.0	No Plants Present			3800	9	0.2	0.0
34	314088	500726	7.0	VALLISNERIA AMER	100	240	4000	100	0.2	0.1
35	314087	500726	30.0	No Plants Present			4700	53	2.0	1.8
36	314111	500733	17.0	No Plants Present			3300	110	0.4	0.3
37	314103	500733	8.5	VALLISNERIA AMER	100	200	4000	50	0.5	0.3
38	314083	500733	30.0	No Plants Present			2800	120	2.0	1.6
39	314115	500740	22.0	No Plants Present			3400	110	1.3	1.1
40	314109	500742	15.0	No Plants Present			3800	260	1.5	1.1

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (+) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	STONEV	1	314229 500974	9.5	VALLISNERIA AMER POT. ZOSTERIFORM	90 10	180	3500 55	1.5 1.3
		2	314218 500974	8.0	POT. NARROW VALLISNERIA AMER POT. RICHARDSONI	90 10 <1	2000	2100 120	0.9 0.5
		3	314209 500973	7.0	VALLISNERIA AMER	100	620	1700 100	1.4 0.7
		4	314200 500972	9.0	VALLISNERIA AMER POT. NARROW	98 2	80	2500 95	0.5 0.4
		5	314191 500972	9.0	POT. NARROW ELODEA CANADENSIS POT. CRISPUS	85 8 7	60	3500 280	0.6 0.3
		6	314232 500979	6.0	VALLISNERIA AMER POT. ZOSTERIFORM	99 1	200	3500 70	1.0 0.7
		7	314223 500980	7.0	POT. NARROW VALLISNERIA AMER	80 20	1720	4600 350	1.0 0.7
		8	314209 500979	2.0	No Plants Present			2500 250	1.9 1.4
		9	314200 500977	2.0	VALLISNERIA AMER HETERANTHERA DUB	90 10	140	2500 450	1.5 0.8
		10	314192 500977	10.0	No Plants Present			2300 200	0.3 0.2
		11	314239 500986	7.0	No Plants Present			1200 100	1.2 1.1
		12	314228 500988	3.0	MYRIO. SPICATUM ELODEA CANADENSIS HETERANTHERA DUB	33 33 33	1480	3000 520	0.3 0.2
		13	314220 500988	3.0	HETERANTHERA DUB ELODEA CANADENSIS BUTOMUS UMBELLAT	98 2 <1	680	4500 1500	0.0 0.0
		14	314254 500994	11.0	No Plants Present			3500 120	2.6 2.2
		15	314244 500993	5.0	VALLISNERIA AMER	100	340	1400 110	1.6 1.0
		16	314236 500994	3.0	MYRIO. SPICATUM	100	120	4400 2200	0.6 0.6
		17	314229 500994	2.0	HETERANTHERA DUB	100	350	2100 1500	0.4 0.2
		18	314261 501001	11.0	No Plants Present			4100 330	2.7 1.7
		19	314251 501001	3.0	MYRIO. SPICATUM HETERANTHERA DUB VALLISNERIA AMER	80 10 10	140	3600 1100	1.5 0.5

20 314267 501009 11.0 No Plants Present 4000 240 2.5 2.3

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR STAG									
		1	309030 497375	31.5	No Plants Present			140 110	2.9 2.5
		2	309018 497375	14.0	No Plants Present			140 100	2.9 2.1
		3	309045 497383	35.0	No Plants Present			150 100	2.6 2.2
		4	309031 497380	12.5	No Plants Present			150 100	3.0 2.5
		5	309021 497381	10.0	No Plants Present			130 100	2.4 2.0
		6	309046 497388	34.0	No Plants Present			150 110	2.4 2.3
		7	309034 497385	12.0	No Plants Present			130 100	1.9 1.8
		8	309024 497386	5.5	No Plants Present			120 100	2.3 2.3
		9	309048 497393	32.0	No Plants Present			190 140	2.7 2.5
		10	309038 497392	11.5	No Plants Present			100 70	1.8 1.6
		11	309027 497392	2.0	No Plants Present			100 98	1.0 0.9
		12	309051 497399	16.5	No Plants Present			220 170	1.8 1.7
		13	309039 497398	5.5	CHARA SPP. POT. GRAMINEUS	75 25	160	70 50	0.9 0.5
		14	309033 497398	2.0	CHARA SPP. POT. GRAMINEUS	70 30	100	60 59	1.0 0.9
		15	309053 497404	33.0	No Plants Present			200 170	2.8 2.7
		16	309054 497405	16.0	No Plants Present			220 160	2.1 2.1
		17	309043 497405	11.0	POT. NARROW POT. RICHARDSONI	80 20	910	60 10	0.8 0.2
		18	309036 497404	2.0	CHARA SPP.	100	10	57 56	0.9 0.8
		19	309053 497410	24.0	No Plants Present			200 150	2.0 2.0
		20	309059 497411	14.0	POT. RICHARDSONI VALLISNERIA AMER	95 5	170	170 110	0.6 0.4
		21	309044 497410	3.5	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI ELODEA CANADENS	85 10 4 1	260	70 50	0.6 0.5
		22	309073 497416	33.0	No Plants Present			270 200	2.8 2.8
		23	309066 497416	16.0	CHARA SPP.	100	20	210 120	1.5 0.6

24	309079 497424	33.0	No Plants Present	290	200	3.2	2.6
25	309089 497421	3.0	CHARA SPP.	390	350	1.1	1.1
26	309087 497436	34.0	No Plants Present	230	220	3.1	2.8

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LOCAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR FAWN									
		1	309576	498257	25.0 No Plants Present			2900 670	2.0 1.9
		2	309566	498246	16.0 POT. NARROW CHARA SPP. ELODEA CANADENS POT. RICHARDSONI	65 25 7 3	232	3300 730	2.1 1.1
		3	309580	498249	22.5 No Plants Present			1800 500	2.5 2.3
		4	309569	498251	12.0 POT. NARROW	100	182	3200 1100	1.5 1.0
		5	309595	498257	24.0 No Plants Present			2100 580	2.8 2.6
		6	309584	498257	8.0 POT. GRAMINEUS POT. RICHARDSONI POT. NARROW CHARA SPP.	85 5 5 5	4830	1300 36	0.1 0.0
		7	309572	498257	7.0 POT. GRAMINEUS CHARA SPP.	60 40	722	3500 2400	0.8 0.3
		8	309609	498263	29.5 No Plants Present			3300 630	1.5 0.5
		9	309599	498262	27.0 No Plants Present			2300 970	2.6 2.1
		10	309587	498262	3.0 CHARA SPP.	100	51	1300 1000	1.0 0.7
		11	309575	498262	4.0 CHARA SPP. POT. RICHARDSONI ELODEA CANADENS	60 38 2	82	3600 2800	0.8 0.6
		12	309612	498269	27.0 No Plants Present			3000 780	2.5 1.9
		13	309501	498267	3.0 CHARA SPP. POT. GRAMINEUS	90 10	162	2200 1600	0.5 0.3
		14	309580	498268	2.5 POT. GRAMINEUS CHARA SPP.	50 50	98	1000 900	0.5 0.3
		15	309580	498268	3.0 CHARA SPP.	100	16	3800 3000	1.0 0.8
		16	309625	498275	39.0 No Plants Present			3500 1100	2.4 2.3
		17	309613	498275	15.0 POT. RICHARDSONI VALLISNERIA AMER NITELLA HYALINA NITELLOP. OBTUSA ELODEA CANADENS	40 30 20 5 5	142	2900 520	1.2 0.9
		18	309606	498276	2.2 CHARA SPP. POT. GRAMINEUS ELODEA CANADENS	69 30 1	218	1800 510	0.3 0.0

19	309626 498279	34.0	No Plants Present	2300	1300	2.3	1.9
20	309619 498282	3.0	POT. RICHARDSONI CHARA SPP. POT. GRAMINEUS NAJAS FLEXILIS	792	3600	2800	0.7
				85			0.6
				7			
				7			
				1			

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR RUSSELL									
		1	309950	498649	27.0 No Plants Present			3500 800	3.1 3.1
		2	309941	498647	18.0 No Plants Present			550 370	2.6 2.3
		3	309930	498646	27.0 No Plants Present			3500 830	1.8 1.5
		4	309973	498651	42.0 No Plants Present			3600 760	2.9 2.8
		5	309961	498654	25.0 No Plants Present			3400 900	2.6 2.2
		6	309952	498654	6.0 POT. NARROW POT. RICHARDSONI	90 10	3200	350 150	1.0 0.7
		7	309945	498653	4.0 POT. GRAMINEUS POT. NARROW CHARA SPP.	50 40 10	1000	800 310	1.5 0.8
		8	309932	498653	33.0 No Plants Present			3500 1000	2.3 2.0
		9	309980	498661	33.0 No Plants Present			3200 700	2.6 2.2
		10	309968	498661	4.0 CHARA SPP. POT. GRAMINEUS	90 10	224	3500 2000	0.7 0.5
		11	309958	498660	3.5 POT. GRAMINEUS CHARA SPP. NAJAS FLEXILIS	80 18 2	85	2000 1800	1.2 0.7
		12	309947	498661	4.0 CHARA SPP. POT. GRAMINEUS	60 40	20	2700 1500	0.5 0.4
		13	309936	498660	40.0 No Plants Present			3500 820	2.1 2.0
		14	309948	498668	34.0 No Plants Present			3400 840	2.4 2.3

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	BELLE	1	312758 499948	7.0	POT. RICHARDSONI VALLISNERIA AMER	50 50	4520	4000 280	0.7 0.4
2	312752 499947	10.0	No Plants Present					3900 300	1.7 1.1
3	312763 499955	8.0	No Plants Present					3600 400	2.0 1.5
4	312755 499955	24.0	No Plants Present					4100 400	1.7 1.0
5	312770 499961	12.0	No Plants Present					4000 270	2.1 1.4
6	312758 499963	40.0	No Plants Present					1100 41	2.7 2.6
7	312777 499963	5.0	POT. RICHARDSONI ELODEA CANADENSIS VALLISNERIA AMER CHARA SPP.	80 10 7 3			3540	4000 700	0.3 0.0
8	312784 499970	28.0	No Plants Present					3600 180	1.8 1.8
9	312774 499971	36.0	No Plants Present					1400 75	3.1 3.0
10	312794 499975	4.0	POT. RICHARDSONI NAJAS FLEXILIS POT. NARROW VALLISNERIA AMER CHARA SPP.	50 20 20 5 5			30	3800 1800	0.6 0.4
11	312784 499978	37.0	No Plants Present					610 19	2.6 2.5
12	312807 499982	11.0	VALLISNERIA AMER	100			50	3400 190	1.9 1.0
13	312794 499979	33.0	No Plants Present					840 43	2.9 2.6
14	312856 499992	3.0	CHARA SPP. NAJAS FLEXILIS NITELLOP. OBTUSA	80 10 10			170	3000 1900	0.1 0.0
15	312847 499990	3.0	NITELLOP. OBTUSA CHARA SPP. NAJAS FLEXILIS MYRIO. SPICATUM VALLISNERIA AMER	40 40 10 5 5			430	3300 2000	0.2 0.2
16	312837 499989	3.0	NAJAS FLEXILIS VALLISNERIA AMER CHARA SPP. ELODEA CANADENSIS MYRIO. SPICATUM NITELLOP. OBTUSA	40 20 20 10 5 5			450	3300 1300	0.5 0.1

Submersed Macrophyte Grapnel Data. SEPTEMBER. 1983

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RIVER	ISLAND	GRID NUMBER	LOTRAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	HENNEPIN	1	314069 500667	33.0	No Plants Present			650 55	1.1 1.0
		2	314060 500663	7.0	VALLISNERIA AMER POT. NARROW	97 3	562	3400 650	0.4 0.2
		3	314077 500671	35.5	No Plants Present			700 46	0.9 0.5
		4	314064 500673	6.5	VALLISNERIA AMER	100	268	3100 180	0.2 0.0
		5	314054 500673	36.0	No Plants Present			330 48	1.5 1.5
		6	314081 500678	33.0	No Plants Present			550 48	2.0 1.0
		7	314069 500678	6.0	VALLISNERIA AMER RANUN. LONGIROST	99 1	894	3600 870	0.4 0.0
		8	314058 500679	35.0	No Plants Present			390 65	1.7 1.1
		9	314086 500689	25.0	No Plants Present			250 55	1.6 0.9
		10	314086 500687	7.0	VALLISNERIA AMER NITELLOP. ORTUSA	99 1	352	2100 230	0.4 0.1
		11	314074 500684	6.0	VALLISNERIA AMER CHARA SPP. ELODEA CANADENS	94 3 3	275	3100 1200	0.3 0.3
		12	314063 500685	34.0	No Plants Present			200 55	1.8 1.2
		13	314100 500696	23.0	No Plants Present			180 63	1.7 0.8
		14	314089 500692	6.0	VALLISNERIA AMER POT. NARROW	99 1	386	3200 480	0.1 0.1
		15	314079 500694	8.0	VALLISNERIA AMER CHARA SPP. MYRIO. SPICATUM NITELLOP. ORTUSA	55 40 4 1	196	3000 490	0.2 0.1
		16	314066 500694	27.0	No Plants Present			300 70	1.5 1.0
		17	314104 500703	25.0	No Plants Present			650 50	1.1 0.7
		18	314093 500702	6.0	VALLISNERIA AMER CHARA SPP.	99 1	170	3400 880	0.2 0.1
		19	314083 500701	7.0	VALLISNERIA AMER POT. RICHARDSONI CHARA SPP.	60 39 1	558	3400 1600	0.3 0.1
		20	314073 500702	25.0	No Plants Present			500 48	1.5 1.1

21	314108	500708	22.0	No Plants Present							750	140	0.9	0.8
22	314096	500708	7.0	CHARA SPP. VALLISNERIA AMER POT. NARROW	90 5 5	80	3300	630	0.2	0.1				
23	314087	500706	6.0	VALLISNERIA AMER MYRIO. SPICATUM POT. NARROW CHARA SPP. POT. NARROW ELODEA CANADENS	70 10 10 4 4 2	60	3800	1100	0.2	0.0				
24	314076	500707	26.0	No Plants Present			1200	95	1.7	1.0				
25	314111	500716	23.0	No Plants Present				600	100	0.7	0.6			
26	314101	500714	12.0	VALLISNERIA AMER POT. NARROW CHARA SPP.	95 25 25	302	3300	480	0.6	0.5				
27	314082	500712	6.0	VALLISNERIA AMER CHARA SPP. MYRIO. SPICATUM	60 20 20	46	2800	850	0.3	0.2				
28	314080	500712	32.0	No Plants Present			450	71	2.1	1.1				
29	314116	500726	13.0	No Plants Present			1200	75	0.9	0.5				
30	314104	500722	25.0	No Plants Present				950	180	0.7	0.3			
31	314086	500722	7.0	VALLISNERIA AMER CHARA SPP.	99 1	192	2700	590	0.3	0.1				
32	314086	500721	33.0	No Plants Present			480	48	2.3	0.9				
33	314111	500729	27.0	No Plants Present			650	250	0.8	0.2				
34	314101	500730	7.0	VALLISNERIA AMER POT. RICHARDSONI MYRIO. SPICATUM	98 1 1	988	2700	260	0.2	0.1				
35	314092	500730	34.0	No Plants Present			550	45	2.0	1.0				
36	314116	500737	27.0	No Plants Present			500	71	1.1	0.7				
37	314106	500736	9.0	VALLISNERIA AMER POT. NARROW	98 1	206	3000	240	0.2	0.2				
38	314098	500737	33.0	No Plants Present			280	48	2.5	1.5				
39	314120	500744	31.0	No Plants Present			1000	68	0.9	0.5				
40	314113	500746	20.0	No Plants Present			1600	140	2.0	1.4				

Submersed Macrophyte Grabnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LOTRAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	STONE	1	314229 500974	7.0	VALLISNERIA AMER	100	582	1300	33 1.3 0.2
		2	314217 500972	8.0	VALLISNERIA AMER POT. NARROW	95 5	1208	1000	130 0.2 0.1
		3	314208 500974	6.5	VALLISNERIA AMER MYRIO. SPICATUM	95 5	470	1000	130 0.4 0.1
		4	314198 500973	9.0	VALLISNERIA AMER	100	1400	750	44 0.5 0.1
		5	314187 500972	9.0	VALLISNERIA AMER HETERANTHERA DUB	55 45	738	480	35 0.5 0.2
		6	314233 500982	11.5	No Plants Present			1100	720 2.6 1.6
		7	314221 500979	6.0	VALLISNERIA AMER HETERANTHERA DUB	60 40	1104	700	180 0.9 0.1
		8	314210 500978	13.0	VALLISNERIA AMER HETERANTHERA DUB	50 50	78	650	34 1.8 0.9
		9	314200 500978	10.0	MYRIO. SPICATUM HETERANTHERA DUB	80 20	80	500	240 0.4 0.2
		10	314190 500978	10.5	No Plants Present			480	50 0.4 0.0
		11	314237 500986	8.0	VALLISNERIA AMER	100	144	3400	370 1.6 0.4
		12	314227 500982	4.0	VALLISNERIA AMER HETERANTHERA DUB	50 50	1214	2000	730 0.3 0.1
		13	314215 500987	2.0	HETERANTHERA DUB ELODEA CANADENS	70 30	1851	1100	630 0.1 0.0
		14	314253 500995	9.0	No Plants Present			1800	110 2.9 1.4
		15	314242 500995	5.5	HETERANTHERA DUB VALLISNERIA AMER	60 40	390	1700	320 0.5 0.1
		16	314232 500992	2.5	HETERANTHERA DUB	100	8148	320	1 0.0 0.0
		17	314219 500989	3.0	LODEA CANADENS MYRIO. SPICATUM	65 35	568	1000	260 0.1 0.1
		18	314257 500003	6.0	No Plants Present			1100	530 2.4 1.7
		19	314249 501002	2.0	HETERANTHERA DUB VALLISNERIA AMER	75 25	74	2800	-0. 0.5 0.0
		20	314259 501008	5.0	VALLISNERIA AMER	100	20	840	280 2.2 2.0

Submersed Macrophyte Grapnel Data. JUNE, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES		DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles)		CURRENT (Ft./Sec.)	
			Upper	Lower					Surface	Bottom		Surface	Bottom
ST. CLAIR STAG		1	309032	497377	31.5	No Plants Present			1200	650	3.0	2.8
		2	309019	497378	12.0	No Plants Present			830	530	2.9	2.7
		3	309043	497387	34.0	No Plants Present			2100	1500	3.2	2.8
		4	309034	497385	13.5	No Plants Present			1100	690	3.1	2.9
		5	309022	497382	10.5	No Plants Present			510	340	3.2	2.9
		6	309044	497392	32.0	No Plants Present			2700	1200	3.0	2.9
		7	309036	497389	13.5	No Plants Present			1100	590	3.0	3.0
		8	309025	497388	5.5	No Plants Present			600	320	2.7	2.1
		9	309046	497397	14.5	No Plants Present			2200	1300	2.7	2.7
		10	309038	497396	13.5	No Plants Present			820	580	2.8	2.8
		11	309026	497393	3.0	No Plants Present			540	430	2.0	1.9
		12	309050	497402	15.5	No Plants Present			2200	1300	2.6	2.6
		13	309041	497403	7.5	POT. NARROW	100	140	1000	550	2.5	1.9
		14	309032	497401	3.0	POT. NARROW	100	1	2000	1500	0.0	0.0
		15	309058	497407	22.0	No Plants Present			2500	1400	3.0	2.9
		16	309053	497408	14.5	POT. NARROW POT. GRAMINEUS	90 20	110	2100	1100	2.3	2.0
		17	309042	497406	18.0	POT. NARROW ELODEA CANADENS	95 5	30	730	490	1.4	1.2
		18	309038	497409	2.0	CHARA SPP.	100	1	3500	2700	0.0	0.0
		19	309062	497413	23.0	No Plants Present			2700	1200	2.8	2.6
		20	309057	497413	12.0	NITELLA HYALINA POT. NARROW ELODEA CANADENS	65 34 1	208	1900	750	1.9	1.8
		21	309046	497413	4.0	CHARA SPP. ELODEA CANADENS	95 5	20	660	430	0.4	0.4
		22	309073	497418	33.0	No Plants Present			2700	1200	3.8	3.6
		23	309064	497419	11.5	CHARA SPP.	100	5	2900	1300	2.4	2.3
		24	309077	497424	32.0	No Plants Present			2600	1400	3.7	3.4

25	309070 497424	4.5	No Plants Present	1800	960	2.7	1.9
26	309084 497433	34.0	No Plants Present	1800	1500	4.0	3.8

Submersed Macrophyte Grapnel Data, JUNE, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES		DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles)		CURRENT (Ft./Sec.)	
			Upper	Lower					Surface	Bottom	Surface	Bottom
ST. CLAIR FAWN												
		1	309572	498246	19.0	CHARA SPP.	100	10	1700	780	2.4	2.2
		2	309565	498250	15.0	POT. NARROW	100	10	820	520	2.6	2.3
		3	309576	498255	10.0	POT. NARROW CHARA SPP.	90 10	10	3400	1200	2.2	0.8
		4	309569	498254	11.0	POT. GRAMINEUS CHARA SPP.	80 20	5	1600	910	2.8	2.3
		5	309595	498264	26.0	No Plants Present			2800	1000	2.4	2.3
		6	309582	498262	5.0	CHARA SPP. POT. GRAMINEUS	98 2	5	3500	2400	1.8	1.4
		7	309573	498259	7.0	POT. NARROW	100	5	1400	700	2.9	1.8
		8	309601	498265	28.0	No Plants Present			2900	1800	3.0	2.4
		9	309595	498267	20.0	CHARA SPP.	100	2	3700	1600	1.8	1.5
		10	309585	498266	3.0	CHARA SPP.	100	1	2500	2000	1.6	1.3
		11	309576	498264	4.0	CHARA SPP.	100	1	1700	1200	2.4	1.6
		12	309608	498272	29.0	No Plants Present			3000	1600	2.9	2.5
		13	309598	498272	3.0	CHARA SPP.	100	1	3100	2600	1.7	1.1
		14	309590	498272	2.5	CHARA SPP. POT. GRAMINEUS	90 10	7	2400	1600	1.5	1.0
		15	309578	498272	3.0	CHARA SPP.	100	1	1500	1100	2.6	1.8
		16	309620	498274	33.0	No Plants Present			5100	1000	2.8	2.2
		17	309613	498276	15.0	POT. GRAMINEUS	100	2	3900	2600	1.4	1.0
		18	309607	498280	3.0	CHARA SPP.	100	30	3800	1500	0.9	0.8
		19	309630	498284	32.0	No Plants Present			3900	1500	2.8	2.2
		20	309620	498286	3.0	CHARA SPP.	100	10	3900	1500	0.9	0.5

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR	RUSSELL	1	309954 498651	30.0	No Plants Present			2500 1200	2.8 2.6
		2	309942 498647	27.0	No Plants Present			3200 1400	2.5 2.5
		3	309932 498642	17.0	POT. NARROW	100	1	3200 1600	2.7 2.5
		4	309980 498658	43.0	No Plants Present			3500 1900	3.1 2.9
		5	309972 498658	37.0	No Plants Present			3400 1900	2.8 2.7
		6	309954 498656	12.5	No Plants Present			2900 1000	2.7 1.5
		7	309945 498654	9.0	POT. GRAMINEUS	100	5	4200 1400	2.7 2.2
		8	309933 498655	33.0	No Plants Present			2800 1700	2.5 2.5
		9	309980 498661	34.0	No Plants Present			3200 1800	3.6 3.4
		10	309970 498662	7.0	POT. NARROW CHARA SPP.	70 30	15	3200 1000	2.2 1.5
		11	309957 498661	3.5	CHARA SPP.	100	1	4300 2400	2.4 1.5
		12	309946 498661	4.5	CHARA SPP.	100	5	2400 2000	2.0 1.5
		13	309936 498662	37.0	No Plants Present			2900 1600	2.5 2.2
		14	309949 498670	35.0	No Plants Present			2900 1900	2.7 2.7

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	BELLE	1	312759 499951	11.5	POT. NARROW POT. CRISPUS	60 40	3	1800	480 0.3 0.2
		2	312754 499954	12.5	No Plants Present			4500	480 1.7 1.4
		3	312767 499960	8.0	POT. CRISPUS	100	3	1100	120 0.2 0.1
		4	312758 499962	23.0	No Plants Present			4500	74 2.6 1.6
		5	312772 499966	17.5	No Plants Present			3800	180 2.6 1.7
		6	312763 499967	33.0	No Plants Present			4200	18 2.5 1.9
		7	312780 499966	8.5	POT. CRISPUS	100	78	4100	1400 0.1 0.1
		8	312783 499973	26.5	No Plants Present			3500	11 2.1 1.5
		9	312772 499971	34.0	No Plants Present			2500	15 2.9 1.8
		10	312786 499978	8.0	POT. RICHARDSONI	100	1	3800	2800 0.1 0.0
		11	312786 499978	37.5	No Plants Present			2600	15 2.8 2.4
		12	312809 499984	11.0	CHARA SPP.	100	1	3800	230 1.5 1.3
		13	312795 500983	30.0	No Plants Present			1100	25 3.1 2.3
		14	312858 499994	3.5	CHARA SPP.	100	8	1300	1100 0.1 0.0
		15	312848 499991	3.5	CHARA SPP. MYRIO. SPICATUM	65 35	22	4100	2200 0.1 0.0
		16	312838 499993	4.0	CHARA SPP. MYRIO. SPICATUM ELODEA CANADENS VALLISNERIA AMER	96 2 1 1	80	1100	560 0.2 0.1
		17	312827 499990	3.5	CHARA SPP. MYRIO. SPICATUM	95 5	50	1200	820 0.1 0.1
		18	312816 499989	12.5	CHARA SPP. POT. NARROW	60 40	4	3500	410 0.8 0.0
		19	312812 500994	38.0	No Plants Present			460	4 2.7 2.5
		20	312859 500001	19.0	No Plants Present			3700	230 0.7 0.1
		21	312848 500000	18.5	No Plants Present			3600	280 1.1 1.0
		22	312840 499998	18.0	No Plants Present			3500	64 1.1 0.9
		23	312827 499995	30.0	No Plants Present			1500	35 1.6 1.1

24 312818 500995 35.0 No Plants Present 3000 20 3.0 2.0

Submersed Macrophyte Grapnel Data, JUNE, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	WENNEPIN	1	314073 500688	34.0	No Plants Present			3600	3 0.7 0.6
		2	314063 500667	6.5	POT. NARROW	100	178	4500	800 0.5 0.1
		3	314077 500676	34.5	No Plants Present			3400	6 1.0 0.8
		4	314067 500675	7.0	POT. NARROW	100	180	4300	400 0.3 0.2
		5	314088 500671	13.0	POT. RICHARDSONI	100	170	2600	330 1.4 0.9
		6	314081 500682	15.0	POT. NARROW NITELLA HYALINA	90 10	59	3500	610 0.6 0.4
		7	314071 500683	7.0	POT. NARROW	100	150	3900	470 0.4 0.2
		8	314061 500678	12.0	No Plants Present			3500	450 1.8 0.8
		9	314084 500691	32.5	No Plants Present			3700	5 1.1 1.1
		10	314086 500690	7.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	45 45 10	120	3200	1400 0.1 0.0
		11	314074 500688	7.0	CHARA SPP. POT. NARROW	70 30	150	3700	1400 0.4 0.1
		12	314064 500686	11.5	POT. RICHARDSONI	100	280	1200	150 2.1 1.7
		13	314100 500698	28.0	No Plants Present			4000	10 0.9 0.8
		14	314089 500696	7.0	POT. NARROW CHARA SPP.	60 40	320	3000	820 0.2 0.0
		15	314078 500694	6.5	CHARA SPP. POT. NARROW POT. CRISPUS	80 15 5	70	3500	1100 0.5 0.3
		16	314069 500693	8.0	POT. NARROW	100	20	3800	1100 1.2 0.4
		17	314105 500704	27.5	No Plants Present			4300	25 0.6 0.6
		18	314094 500703	7.0	CHARA SPP. POT. NARROW	95 5	110	3300	1100 0.4 0.2
		19	314083 500703	7.0	POT. NARROW CHARA SPP.	50 50	30	3200	1500 0.2 0.1
		20	314073 500700	35.0	No Plants Present			4100	12 1.5 1.0
		21	314107 500709	27.5	No Plants Present			4100	11 1.0 0.6
		22	314098 500711	7.0	CHARA SPP.	95	160	3000	730 0.3 0.0

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Submersed Macrophyte Grapnel Data. JUNE. 1984

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2. (+) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LOTRAN COORDINATES Upper Lower	DEPTH (ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	STONEY	1	314231 501975	10.0	POT. NARROW MYRIO. EXALBESC	90 10	8	2700	53 1.2 1.1
		2	314220 501973	10.0	POT. NARROW VALLISNERIA AMER	50 50	4	2400	55 1.3 1.0
		3	314206 501974	8.0	POT. NARROW POT. CRISPUS VALLISNERIA AMER	45 45 10	88	590	40 1.0 0.6
		4	314199 501972	10.0	VALLISNERIA AMER MYRIO. SPICATUM POT. NARROW ELODEA CANADENS	25 25 25 25	104	2700	53 0.7 0.2
		5	314188 501972	9.0	POT. NARROW MYRIO. SPICATUM	70 30	99	640	100 0.7 0.4
		6	314235 501980	11.0	No Plants Present			4400	5 1.5 0.9
		7	314222 501981	8.0	POT. NARROW	100	840	4300	17 1.0 0.7
		8	314212 501980	9.0	No Plants Present			2300	260 1.4 1.0
		9	314201 501978	13.0	POT. CRISPUS MYRIO. SPICATUM POT. NARROW	60 35 5	5	2600	65 0.3 0.2
		10	314191 501980	11.0	POT. CRISPUS	100	1	460	10 0.6 0.4
		11	314238 501985	9.5	No Plants Present			820	28 1.2 0.8
		12	314226 501988	5.0	POT. CRISPUS MYRIO. SPICATUM ELODEA CANADENS	95 4 1	922	5000	380 0.3 0.0
		13	314213 501989	4.0	POT. CRISPUS ELODEA CANADENS	90 10	3696	3800	53 0.0 0.0
		14	314252 501996	11.5	No Plants Present			2600	29 2.4 0.7
		15	314242 501992	7.5	No Plants Present			630	85 2.1 1.1
		16	314232 501995	3.0	POT. CRISPUS	100	3698	480	110 0.1 0.0
		17	314217 501940	3.5	ELODEA CANADENS POT. CRISPUS	95 5	2712	4100	1500 0.2 0.0
		18	314256 501000	8.0	No Plants Present			2600	240 2.2 2.0
		19	314250 501005	2.5	VALLISNERIA AMER	100	1	4200	2800 1.8 1.3

20 314260 501010 6.0 HETERANTHERA DUB 100 2 600 220 3.1 1.8

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR STAG		1	309032 497377	31.0	No Plants Present			760 150	3.0 2.8
		2	309019 497377	15.0	No Plants Present			3300 1000	3.1 2.9
		3	309040 497383	34.5	No Plants Present			550 90	3.0 2.9
		4	309032 497383	13.5	No Plants Present			750 230	2.7 2.2
		5	309021 497382	12.0	No Plants Present			3500 1400	2.9 2.6
		6	309045 497389	32.0	No Plants Present			410 78	2.9 2.9
		7	309035 497387	12.5	No Plants Present			3000 1000	3.0 2.3
		8	309024 497387	7.0	No Plants Present			3400 2000	2.8 2.0
		9	309050 497394	32.0	No Plants Present			500 90	3.0 3.0
		10	309038 497394	12.0	No Plants Present			640 260	2.7 2.0
		11	309027 497394	4.0	No Plants Present			1000 840	1.7 1.5
		12	309052 497401	18.5	CHARA SPP.	100	1	500 85	2.9 2.7
		13	309040 497402	6.0	POT. GRAMINEUS CHARA SPP.	60 40	50	680 520	1.4 0.5
		14	309034 497404	4.0	POT. GRAMINEUS ZANN. PALUSTRIS CHARA SPP.	80 10 10	104	640 550	0.1 0.1
		15	309059 497405	31.5	No Plants Present			440 100	3.3 2.8
		16	309053 497407	17.5	No Plants Present			730 180	2.8 2.1
		17	309043 497410	15.5	POT. NARROW POT. RICHARDSONI NITELLA HYALINA	50 45 5	128	1000 170	0.8 0.3
		18	309038 497407	3.0	POT. RICHARDSONI CHARA SPP. POT. ZOSTERIFORM	90 5 5	10	650 540	0.1 0.1
		19	309063 497412	22.0	No Plants Present			380 80	2.8 2.1
		20	309056 497412	10.0	POT. RICHARDSONI CHARA SPP.	99 1	110	380 220	1.3 0.7
		21	309045 497413	4.0	CHARA SPP. POT. GRAMINEUS VALLISNERIA AMER	55 40 5	110	600 500	0.6 0.4

[illegible]

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES		DEPTH	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR FAWN		1	309569	498245	22.0	CHARA SPP.	100	2	4700	750 2.6 1.9
		2	309564	498247	18.0	POT. NARROW POT. GRAMINEUS	95 5	140	1100	300 2.5 2.0
		3	309578	498252	19.0	CHARA SPP.	100	1	4200	670 2.4 1.9
		4	309567	498250	10.0	POT. GRAMINEUS POT. NARROW	90 10	90	1300	720 2.2 1.0
		5	309593	498257	21.0	No Plants Present			5000	420 0.7 0.3
		6	309581	498257	7.0	POT. GRAMINEUS CHARA SPP.	85 15	160	3700	1700 1.7 1.1
		7	309570	498258	8.0	POT. GRAMINEUS CHARA SPP.	98 2	102	4500	650 2.5 0.5
		8	309606	498261	25.0	No Plants Present			2200	100 2.2 1.4
		9	309598	498262	25.0	CHARA SPP.	100	2	4500	290 3.0 2.4
		10	309585	498264	4.0	CHARA SPP.	100	14	3400	2900 1.7 1.3
		11	309575	498263	5.0	CHARA SPP.	100	20	1000	570 1.7 1.1
		12	309612	498271	26.0	No Plants Present			3500	210 3.1 2.6
		13	309601	498271	3.0	POT. GRAMINEUS CHARA SPP.	50 50	32	2700	2500 1.2 0.9
		14	309590	498270	3.0	POT. GRAMINEUS CHARA SPP.	50 50	40	2000	1500 0.8 0.5
		15	309579	498271	4.0	CHARA SPP.	100	8	1000	880 1.6 1.2
		16	309619	498273	29.5	No Plants Present			2500	150 3.5 2.9
		17	309611	498276	10.0	POT. NARROW POT. GRAMINEUS CHARA SPP.	47 47 6	26	3500	100 1.0 0.4
		18	309606	498277	3.0	CHARA SPP. POT. GRAMINEUS	80 20	20	2500	2000 0.8 0.7
		19	309626	498284	29.0	No Plants Present			2000	77 3.6 2.9
		20	309619	498285	3.0	POT. GRAMINEUS CHARA SPP.	80 20	130	1200	900 0.8 0.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data
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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR RUSSELL									
		1	309951 498650	30.5	No Plants Present			3500	210 2.7 2.4
		2	309939 498650	15.0	POT. NARROW POT. GRAMINEUS CHARA SPP.	97 2 1	140	3800	800 2.6 1.1
		3	309928 498649	30.0	No Plants Present			3500	320 2.5 2.0
		4	309974 498653	39.0	No Plants Present			3300	140 3.3 2.8
		5	309967 498659	32.0	No Plants Present			3400	120 3.4 2.9
		6	309954 498655	11.0	POT. NARROW	100	460	4000	900 2.6 1.4
		7	309943 498655	8.0	POT. GRAMINEUS CHARA SPP.	94 6	230	4300	1800 1.5 0.8
		8	309931 498657	35.0	No Plants Present			3500	320 2.3 1.9
		9	309977 498664	27.0	No Plants Present			3000	140 1.5 1.2
		10	309969 498666	4.5	POT. GRAMINEUS CHARA SPP.	75 25	88	3800	2000 1.2 0.6
		11	309958 498662	4.0	CHARA SPP. POT. GRAMINEUS	70 30	14	4100	2500 1.3 0.7
		12	309949 498664	5.5	CHARA SPP.	100	2	4200	2300 1.9 1.4
		13	309937 498662	36.0	No Plants Present			3600	320 2.8 2.2
		14	309952 498670	7.0	CHARA SPP.	100	5	4300	1500 1.7 1.0

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RIVER	ISLAND	GRID NUMBER	LOTRAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	BELLE	1	312760 499852	11.0	VALLISNERIA AMER	100	10	3600	300 1.1 0.3
		2	312753 499950	12.0	No Plants Present			3500	290 1.8 1.2
		3	312766 499959	6.0	VALLISNERIA AMER POT. ZOSTERIFORM POT. CRISPUS POT. RICHARDSONI	40 25 25 10	46	3100	1600 0.4 0.2
		4	312757 499959	26.5	No Plants Present			3300	16 2.5 1.4
		5	312773 499968	13.0	No Plants Present			3400	100 2.9 2.0
		6	312759 499967	39.0	No Plants Present			3400	8 2.6 2.6
		7	312780 499967	7.5	VALLISNERIA AMER POT. NARROW POT. CRISPUS	60 25 15	30	2500	1100 0.1 0.1
		8	312782 499971	18.0	No Plants Present			2800	28 2.3 1.5
		9	312775 499973	33.5	No Plants Present			3200	27 3.0 2.7
		10	312796 499978	6.5	POT. RICHARDSONI POT. NARROW CHARA SPP. VALLISNERIA AMER POT. ZOSTERIFORM	40 30 24 5 1	118	2800	410 0.4 0.2
		11	312784 499970	35.0	No Plants Present			3300	28 2.9 2.7
		12	312807 499985	8.0	POT. RICHARDSONI VALLISNERIA AMER MYRIO. SPICATUM POT. ZOSTERIFORM	95 3 1 1	155	4600	350 1.5 1.4
		13	312795 499980	34.5	No Plants Present			3300	37 3.0 2.8
		14	312859 499995	4.0	CHARA SPP. VALLISNERIA AMER NAJAS FLEXILIS	85 10 5	68	4400	2600 0.1 0.1
		15	312847 499994	3.5	CHARA SPP. MYRIO. SPICATUM VALLISNERIA AMER NAJAS FLEXILIS NITELLOP. OBTUSA	84 10 3 2 1	200	4200	2000 0.1 0.0
		16	312838 499993	4.0	CHARA SPP. NITELLOP. OBTUSA VALLISNERIA AMER NAJAS FLEXILIS	87 3 2 2	372	4600	1600 0.3 0.2

17	312828	499991	4.6	POT. NARROW MYRIO. SPICATUM POT. GRAMINEUS	2 2 2	154	4300	2800	0.2	0.2
				CHARA SPP. NITELLOP. OBTUSA NAJAS FLEXILIS VALLISNERIA AMER	90 4 4 2					
18	312817	499988	7.5	POT. NARROW CHARA SPP. POT. RICHARDSONI POT. ZOSTERIFORM NAJAS FLEXILIS NITELLA HYALINA	55 20 10 6 5 2 2	*	2300	230	0.6	0.5
19	312809	499992	32.0	No Plants Present			3500	13	3.1	2.4
20	312860	499000	20.5	No Plants Present			4100	14	1.3	1.3
21	312851	499000	19.5	No Plants Present			4600	20	1.1	1.0
22	312840	499998	22.5	No Plants Present			4200	17	1.7	1.2
23	312829	499994	27.5	No Plants Present			3500	11	2.1	2.1
24	312818	499994	34.0	No Plants Present			3500	32	3.2	2.7

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data
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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	HENNEPIN	1	314073 500665	33.0	No Plants Present			700	4 1.4 1.1
		2	314063 500666	3.6	POT. NARROW VALLISNERIA AMER	80 20	2625	1300	360 0.2 0.1
		3	314075 500671	34.5	No Plants Present			780	3 1.2 0.8
		4	314067 500673	4.0	POT. NARROW VALLISNERIA AMER	75 20	3390	1300	91 0.3 0.1
		5	314057 500671	13.0	VALLISNERIA AMER	100	38	530	18 1.2 1.1
		6	314079 500679	22.0	No Plants Present			900	4 0.6 0.3
		7	314070 500680	4.2	POT. NARROW VALLISNERIA AMER	50 50	2800	1500	35 0.3 0.1
		8	314060 500679	12.0	VALLISNERIA AMER	100	8	800	42 2.0 1.7
		9	314093 500690	30.5	No Plants Present			1100	3 0.7 0.3
		10	314083 500686	3.9	VALLISNERIA AMER	100	100	1800	220 0.2 0.1
		11	314075 500688	4.5	POT. NARROW CHARA SPP. VALLISNERIA AMER	45 45	2540	1700	150 0.3 0.1
					ELODEA CANADENSIS	1			
		12	314064 500684	8.0	POT. RICHARDSONI VALLISNERIA AMER	65 34	348	800	120 1.8 0.2
					POT. ZOSTERIFORM	1			
		13	314086 500693	32.0	No Plants Present			1200	5 1.3 0.9
		14	314087 500693	5.1	VALLISNERIA AMER	100	130	1900	360 0.3 0.0
		15	314079 500695	4.0	CHARA SPP. VALLISNERIA AMER	90 10	490	1200	260 0.2 0.2
		16	314068 500693	8.0	POT. ZOSTERIFORM VALLISNERIA AMER	66 30	408	470	120 0.2 0.1
					CHARA SPP.	2			
					POT. GRAMINEUS	2			
		17	314101 500700	30.5	No Plants Present			1000	4 1.3 1.1
		18	314091 500700	5.0	VALLISNERIA AMER MYRIO. SPICATUM	95 5	75	1900	310 0.2 0.2
		19	314081 500697	4.5	CHARA SPP. VALLISNERIA AMER	70 30	138	1300	150 0.3 0.3

20	314071	500700	8.0	No Plants Present			310	44	0.3	0.1
21	314105	500710	30.0	No Plants Present			1300	5	1.4	1.1
22	314095	500706	7.1	CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER	70 25 5	*	2400	550	0.3	0.1
23	314086	500708	4.9	VALLISNERIA AMER CHARA SPP. MYRIO. SPICATUM	50 45 5	676	1300	260	0.3	0.2
24	314080	500709	7.5	POT. RICHARDSONI VALLISNERIA AMER NAJAS FLEXILIS POT. ZOSTERIFORM	60 38 1 1	70	460	120	0.2	0.1
25	314108	500716	29.5	No Plants Present			2400	10	1.5	0.7
26	314099	500712	6.9	VALLISNERIA AMER	100	110	2800	730	0.2	0.1
27	314089	500714	4.7	VALLISNERIA AMER CHARA SPP. MYRIO. SPICATUM NAJAS FLEXILIS	45 40 10 5	550	1100	170	0.1	0.1
28	314090	500712	31.5	No Plants Present			570	4	1.7	1.4
29	314112	500722	26.5	No Plants Present			2200	6	0.6	0.5
30	314103	500721	10.1	CHARA SPP. VALLISNERIA AMER POT. NARROW	50 40 10	10	2400	46	0.4	0.2
31	314093	500719	4.8	VALLISNERIA AMER	100	110	1100	230	0.3	0.2
32	314092	500719	34.5	No Plants Present			500	5	2.3	1.8
33	314106	500727	21.0	No Plants Present			1900	5	0.5	0.4
34	314097	500727	5.3	VALLISNERIA AMER CHARA SPP. POT. CRISPUS	70 25 5	396	1400	120	0.2	0.0
35	314085	500722	32.0	No Plants Present			460	6	2.5	2.3
36	314111	500736	31.0	No Plants Present			2000	2	0.9	0.2
37	314102	500734	8.1	POT. RICHARDSONI	100	1674	760	86	0.6	0.2
38	314088	500733	33.0	No Plants Present			430	5	2.6	2.2
39	314114	500741	23.5	No Plants Present			1600	3	1.0	0.6
40	314105	500741	33.0	No Plants Present			350	3	2.1	1.9

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	STONEY	1	314230 501976	9.0	VALLISNERIA AMER	100	110	2800	260 1.6 0.5
		2	314218 501976	5.0	POT. NARROW VALLISNERIA AMER	70 30	430	2300	210 0.7 0.2
		3	314209 501974	8.0	VALLISNERIA AMER POT. NARROW POT. ZOSTERIFORM	50 35 15	190	3300	730 0.6 0.3
		4	314216 501974	11.0	VALLISNERIA AMER	100	188	3600	630 0.6 0.1
		5	314286 501973	9.0	POT. RICHARDSONI VALLISNERIA AMER	70 30	430	3600	470 0.5 0.1
		6	314235 501983	14.0	POT. ZOSTERIFORM	100	5	2900	150 2.3 1.0
		7	314221 500982	7.5	POT. NARROW VALLISNERIA AMER	50 50	530	2800	250 1.0 0.2
		8	314212 500980	12.5	No Plants Present			2200	250 1.2 1.2
		9	314200 500980	9.5	No Plants Present			2700	1900 0.1 0.0
		10	314181 500979	10.5	No Plants Present			3000	160 0.5 0.1
		11	314238 501989	9.5	VALLISNERIA AMER POT. NARROW	80 20	12	3000	840 1.0 0.5
		12	314228 501989	3.0	ELODEA CANADENSIS VALLISNERIA AMER MYRIO. SPICATUM HETERANTHERA DUB POT. CRISPUS	40 30 20 7 3	864	2000	1500 0.1 0.0
		13	314217 501987	3.0	ELODEA CANADENSIS VALLISNERIA AMER	99 1	1920	2500	1100 0.0 0.0
		14	314254 501996	10.5	No Plants Present			2700	260 2.4 1.6
		15	314243 501997	6.5	VALLISNERIA AMER POT. NARROW POT. CRISPUS BUTOMUS UMBELLAT	45 25 25 5	98	3000	700 1.5 0.7
		16	314233 501996	3.0	HETERANTHERA DUB	100	200	3000	2000 0.1 0.0
		17	314222 501995	2.5	RANUN. LONGIROST HETERANTHERA DUB ELODEA CANADENSIS	50 30 20	1120	2700	1600 0.1 0.1
		18	314258 501004	7.0	No Plants Present			2200	710 1.7 0.9

19	314249	501105	4.0	VALLISNERIA AMER	100	28	3700	1200	0.7	0.6
20	314299	501009	3.0	POT. CRISPUS	60	38	1200	440	1.5	1.0
				VALLISNERIA AMER	40					

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR STAG									
		1	308030 497378	30.5	No Plants Present			3500 600	3.0 2.5
		2	309018 497371	15.5	No Plants Present			2000 350	2.9 2.4
		3	309041 497381	35.5	No Plants Present			3000 320	2.7 2.4
		4	308032 497384	14.0	CHARA SPP.	100	1	4300 1100	2.7 2.4
		5	308022 497382	12.0	No Plants Present			3800 1300	3.0 2.3
		6	309045 497390	32.5	No Plants Present			3800 520	2.9 2.3
		7	308034 497388	13.0	No Plants Present			4500 1100	2.5 1.6
		8	308024 497386	7.0	No Plants Present			3400 1300	2.3 2.0
		9	308047 497395	31.5	No Plants Present			3600 580	2.4 2.3
		10	308037 497394	12.0	No Plants Present			3700 1200	2.2 1.7
		11	308028 497385	3.5	No Plants Present			4000 3500	1.6 1.5
		12	309049 497399	14.5	No Plants Present			3000 590	2.1 1.6
		13	308039 497399	6.0	POT. RICHARDSONI POT. GRAMINEUS POT. NARROW CHARA SPP. ELODEA CANADENSIS	45 45 5 4 1	1830	4000 2500	0.5 0.3
		14	308033 497401	3.0	CHARA SPP. POT. GRAMINEUS	80 20	100	4300 3500	1.4 1.0
		15	308051 497406	31.0	No Plants Present			500 47	2.6 1.6
		16	308053 497407	19.0	No Plants Present			3200 580	2.6 1.4
		17	308043 497407	20.0	NITELLA HYALINA POT. NARROW POT. RICHARDSONI ELODEA CANADENSIS	35 35 25 5	360	4000 300	1.0 0.2
		18	309036 497406	3.0	CHARA SPP.	100	20	4000 3200	0.4 0.4
		19	309055 497412	24.0	No Plants Present			230 60	2.2 1.7
		20	309057 497411	12.0	POT. NARROW ELODEA CANADENSIS POT. RICHARDSONI	70 25 5	620	4000 470	1.0 0.1
		21	309046 497412	3.5	POT. GRAMINEUS POT. RICHARDSONI	55 20	54	4000 3000	0.9 0.8

CHARA SPP. 20
NAJAS FLEXILIS 5

22	308074	487418	31.0	No Plants Present	410	40	3.0	2.5
23	308068	487418	16.0	CHARA SPP.	100	10	2500	600
24	308076	487423	28.0	No Plants Present	370	40	3.0	2.7
25	308070	487423	3.0	CHARA SPP.	100	10	3000	2300
26	308083	487430	31.5	No Plants Present	580	100	3.2	3.1

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LOCAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR FAWN									
		1	308578 498245	23.0	No Plants Present			3500 58	2.1 1.2
		2	308564 498243	18.0	POT. RICHARDSONI POT. NARROW POT. GRAMINEUS CHARA SPP.	50 40 5 5	40	1000 130	2.5 0.9
		3	308579 498247	20.0	CHARA SPP.	100	1	1800 110	2.8 2.3
		4	308567 498251	15.0	POT. NARROW CHARA SPP.	80 20	70	1000 120	2.4 0.4
		5	308591 498257	24.0	CHARA SPP.	100	3	4300 150	3.1 2.4
		6	308583 498255	9.0	POT. GRAMINEUS CHARA SPP.	99 1	1080	1200 20	0.5 0.1
		7	308571 498256	9.0	POT. RICHARDSONI POT. GRAMINEUS	70 30	800	4500 100	1.3 0.3
		8	308606 498265	25.0	No Plants Present			3300 53	2.3 1.6
		9	308595 498262	10.0	POT. RICHARDSONI ELODEA CANADENSIS POT. NARROW	98 1 1	2490	930 230	0.7 0.1
		10	308587 498262	4.0	CHARA SPP.	100	40	700 480	1.2 0.7
		11	308575 498265	5.0	CHARA SPP. POT. ZOSTERIFORM	95 5	40	3000 1100	1.0 0.4
		12	308611 498269	24.0	No Plants Present			2500 160	3.2 2.7
		13	308600 498270	4.0	CHARA SPP. POT. GRAMINEUS	95 5	40	4800 1500	1.3 0.8
		14	308589 498269	3.0	CHARA SPP. POT. NARROW	98 2	20	4500 3300	0.7 0.5
		15	308579 498269	4.0	CHARA SPP.	100	25	3800 2200	1.2 1.0
		16	308619 498275	28.0	No Plants Present			3300 110	2.9 2.2
		17	308612 498273	9.0	POT. GRAMINEUS POT. NARROW POT. ZOSTERIFORM	98 1 1	380	3500 450	0.4 0.2
		18	308607 498275	3.0	CHARA SPP. POT. GRAMINEUS	80 20	12	4800 2600	0.4 0.3
		19	308626 498284	29.0	No Plants Present			3500 310	3.2 3.0

20	309619	498282	3.0	POT. RICHARDSONI CHARA SPP. POT. GRAMINEUS POT. NARROW	50 25 20 5	640	850	440	0.7	0.6
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Submersed Macrophyte Grabnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
ST. CLAIR RUSSELL									
		1	309952 498649	32.5	No Plants Present			2000	1. 3.1 2.9
		2	309942 498647	24.0	No Plants Present			1800	1 2.7 0.6
		3	309829 498648	25.5	No Plants Present			3700	1. 2.6 1.6
		4	309973 498656	39.0	No Plants Present			580	0. 3.5 2.7
		5	309967 498653	34.5	No Plants Present			2500	2 3.4 3.2
		6	309954 498655	11.5	POT. NARROW	100	646	3300	4 1.4 0.2
		7	309945 498653	8.0	POT. GRAMINEUS POT. NARROW CHARA SPP.	95 3 2	650	4700	120 0.8 0.2
		8	309934 498654	31.0	No Plants Present			3200	1. 2.4 1.9
		9	309979 498662	31.0	No Plants Present			1500	3 3.1 2.8
		10	309967 498663	6.0	POT. GRAMINEUS CHARA SPP.	70 30	186	3000	730 0.5 0.1
		11	309957 498661	4.5	POT. GRAMINEUS CHARA SPP.	50 50	10	3400	1900 0.6 0.3
		12	309948 498664	5.0	POT. GRAMINEUS CHARA SPP.	50 50	10	3700	820 0.9 0.7
		13	309934 498661	38.5	No Plants Present			1500	2 2.5 2.5
		14	309949 498671	15.5	No Plants Present			3600	1. 2.2 1.4

Submersed Macrophyte Grabnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	BELLE	1	312760 499950	4.0	VALLISNERIA AMER	100	258	440 250	1.2 0.9
		2	312753 499952	11.5	No Plants Present			300 15	1.8 1.6
		3	312768 499954	8.0	VALLISNERIA AMER NAJAS FLEXILIS POT. ZOSTERIFORM POT. CRISPUS CHARA SPP.	94 3 1 1 1	132	430 55	0.4 0.1
		4	312757 499959	24.0	No Plants Present			270 2	3.1 2.9
		5	312772 499967	15.5	No Plants Present			430 20	3.0 2.7
		6	312762 499965	35.0	No Plants Present			300 1	3.2 2.8
		7	312780 499968	6.0	VALLISNERIA AMER CHARA SPP.	95 5	90	100 25	0.3 0.1
		8	312782 499971	19.0	No Plants Present			300 1	2.5 1.5
		9	312776 499969	32.5	No Plants Present			460 2	3.0 2.8
		10	312796 499978	8.0	VALLISNERIA AMER CHARA SPP. POT. NARROW POT. RICHARDSONI	40 40 10 10	4	1000 560	0.6 0.5
		11	312785 499975	33.5	No Plants Present			270 1	3.2 3.0
		12	312809 499985	11.0	VALLISNERIA AMER	100	32	1000 47	1.5 1.0
		13	312794 499983	35.5	No Plants Present			1600 14	3.3 3.0
		14	312858 499984	3.0	CHARA SPP. VALLISNERIA AMER NAJAS FLEXILIS MYRIO. SPICATUM NITELLOP. OBTUSA	60 20 10 7 3	218	3900 2300	0.4 0.1
		15	312849 499990	3.0	CHARA SPP. NAJAS FLEXILIS MYRIO. SPICATUM NITELLOP. OBTUSA	45 30 12 4	248	3000 800	0.6 0.3
		16	312838 499992	5.0	CHARA SPP. NAJAS FLEXILIS VALLISNERIA AMER MYRIO. SPICATUM	45 40 8 3	380	210 61	0.2 0.2

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface Bottom	CURRENT (Ft./Sec.) Surface Bottom
DETROIT	HENNEPIN	1	314076 500672	33.5	No Plants Present			1100 3	1.3 0.8
2	314064 500668	7.0	VALLISNERIA AMER	70	470	290	76	0.3	0.1
			POT. NARROW	30					
3	314081 500675	36.0	No Plants Present			1300	3	1.5	0.9
4	314067 500674	6.5	VALLISNERIA AMER	100	352	300	97	0.2	0.1
5	314058 500675	12.0	VALLISNERIA AMER	100	20	410	11	1.4	0.8
6	314082 500682	21.0	No Plants Present			670	10	0.7	0.4
7	314071 500681	7.0	VALLISNERIA AMER	100	160	280	96	0.4	0.1
8	314062 500682	12.0	VALLISNERIA AMER	100	2	480	46	2.0	1.4
9	314094 500691	32.5	No Plants Present			1100	2	1.5	0.8
10	314085 500690	6.0	VALLISNERIA AMER	100	260	570	15	0.4	0.1
11	314072 500691	6.5	VALLISNERIA AMER	100	370	340	1	0.5	0.1
12	314065 500689	9.0	VALLISNERIA AMER	100	10	660	120	1.0	0.2
13	314099 500696	27.0	No Plants Present			1200	3	1.6	0.7
14	314088 500695	6.5	VALLISNERIA AMER	100	250	560	100	0.2	0.1
15	314077 500695	6.0	VALLISNERIA AMER	95	134	370	160	0.3	0.2
			CHARA SPP.	5					
16	314071 500696	8.0	VALLISNERIA AMER	100	125	420	1	1.4	0.2
17	314103 500704	28.5	No Plants Present			980	2	1.3	0.3
18	314091 500705	6.0	VALLISNERIA AMER	70	200	630	110	0.3	0.1
			CHARA SPP.	30					
19	314081 500702	6.0	VALLISNERIA AMER	50	188	380	170	0.3	0.0
			CHARA SPP.	50					
20	314075 500705	7.0	POT. RICHARDSONI	80	115	490	130	0.6	0.1
			VALLISNERIA AMER	20					
21	314107 500708	30.0	No Plants Present			850	4	1.3	0.5
22	314094 500709	6.0	VALLISNERIA AMER	100	580	480	22	0.3	0.1
23	314085 500707	6.0	VALLISNERIA AMER	95	160	450	150	0.3	0.1
			MYRIO. SPICATUM	5					

24	314079	500707	8.0	POT. RICHARDSONI VALLISNERIA AMER NAJAS FLEXILIS	60 25 15	538	240	1.	1.1	0.8
25	314109	500715	28.5	No Plants Present			560	2	1.3	0.4
26	314097	500715	5.0	VALLISNERIA AMER CHARA SPP.	90 10	810	580	170	0.1	0.0
27	314089	500716	6.0	VALLISNERIA AMER	100	172	360	91	0.2	0.1
28	314081	500714	34.0	No Plants Present			210	1	2.0	1.6
29	314112	500718	26.0	No Plants Present			600	3	1.4	0.5
30	314101	500720	7.0	VALLISNERIA AMER	100	92	700	180	0.5	0.1
31	314092	500719	6.0	VALLISNERIA AMER	100	400	300	3	0.3	0.1
32	314083	500723	32.0	No Plants Present			230	1.	2.4	1.6
33	314105	500728	10.0	VALLISNERIA AMER CHARA SPP.	99 1	110	1000	130	0.2	0.1
34	314096	500729	9.0	VALLISNERIA AMER	100	130	360	7	0.4	0.2
35	314087	500728	31.5	No Plants Present			240	1	2.1	1.5
36	314109	500734	10.0	VALLISNERIA AMER	100	200	1100	130	0.2	0.1
37	314101	500736	32.0	No Plants Present			430	2	1.9	1.1
38	314088	500737	30.0	No Plants Present			230	1	2.5	1.7
39	314114	500743	12.5	No Plants Present			1000	16	1.5	0.5
40	314106	500746	30.0	No Plants Present			440	2	2.1	1.5

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
 2. (*) indicates < 0.100 g/m²

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES		DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles)		CURRENT (Ft./Sec.)
			Upper	Lower					Surface	Bottom	
DETROIT	STONEY	1	314228	501972	9.0	VALLISNERIA AMER	100	236	4300	340	1.1 0.3
		2	314217	501971	11.0	No Plants Present			4100	320	2.2 1.2
		3	314207	501972	8.0	VALLISNERIA AMER	100	670	4000	150	0.8 0.1
		4	314197	501971	9.0	VALLISNERIA AMER	100	92	4100	250	0.5 0.3
		5	314187	501971	9.5	VALLISNERIA AMER	100	670	4100	130	0.4 0.1
		6	314233	501980	13.0	No Plants Present			3500	150	2.3 1.6
		7	314221	501980	7.5	POT. NARROW VALLISNERIA AMER	70 30	918	4000	100	0.5 0.0
		8	314212	501978	10.0	VALLISNERIA AMER	100	418	3800	100	1.6 1.1
		9	314200	501978	8.5	No Plants Present			3500	790	0.4 0.3
		10	314191	501978	10.0	No Plants Present			4400	400	0.4 0.1
		11	314237	501986	9.0	VALLISNERIA AMER	100	28	4200	610	1.2 0.3
		12	314225	501982	4.0	HETERANTHERA DUB ELODEA CANADENS MYRIO. SPICATUM VALLISNERIA AMER	60 38 1 1	3024	4000	2500	0.1 0.0
		13	314216	501985	3.5	HETERANTHERA DUB ELODEA CANADENS POT. CRISPUS	98 1 1	351	4000	2000	0.3 0.1
		14	314250	501992	10.0	No Plants Present			3200	450	2.7 1.6
		15	314240	501994	6.0	VALLISNERIA AMER	100	48	3900	900	1.4 0.4
		16	314230	501995	3.0	HETERANTHERA DUB	100	3080	3400	500	0.2 0.2
		17	314220	501993	3.5	ELODEA CANADENS HETERANTHERA DUB	60 40	620	3800	1800	0.1 0.0
		18	314254	502001	7.0	No Plants Present			3500	1000	2.3 1.5
		19	314246	502001	2.0	VALLISNERIA AMER	100	60	3900	3500	0.7 0.6
		20	314260	502010	5.0	HETERANTHERA DUB	100	5	4200	1500	2.3 1.6

APPENDIX K

Submersed Macrophyte Grapnel Data - A Summary

Composition and frequency of occurrence (six dates) of submersed plants, biomass of plants per haul, and physical data from measurements associated with the sampling grid at the six islands or shoals. Potamogeton spp. are the narrow-leaf forms of the genus.

Appendix K

Table 1. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stag Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	No plants	0	25	44	3.0	2.7
2	No plants	0	14	56	2.8	2.3
3	No plants	0	34	41	2.7	2.5
4	No plants	0	14	52	2.8	2.6
5	No plants	0	11	62	2.8	2.4
6	No plants	0	30	43	2.8	2.6
7	No plants	0	13	54	2.4	2.0
8	No plants	0	6	63	2.6	2.2
9	No plants	0	27	37		
10	No plants	0	12	50	2.2	1.9
11	<u>Chara</u> (1)	Tr	3	86	1.6	1.5
12	<u>Chara</u> (1)	Tr	18	45	2.3	2.1
13	<u>Chara</u> (4) <u>Elodea</u> (3) <u>P. gramineus</u> (3) <u>Potamogeton</u> spp. (3) <u>Myriophyllum</u> (1) <u>Nitella</u> (1) <u>P. richardsonii</u> (1)	1117	8	62	1.2	0.7
14	<u>Chara</u> (3) <u>P. gramineus</u> (3) <u>Elodea</u> (1) <u>Nitella</u> (1) <u>P. crispus</u> (1) <u>P. richardsonii</u> (1) <u>Potamogeton</u> spp. (1) <u>Zannichellia</u> (1)	668	3	73	0.6	0.4
15	No plants	0	26	41	2.7	2.4
16	<u>Potamogeton</u> spp. (2) <u>Chara</u> (1) <u>Nitella</u> (1) <u>P. gramineus</u> (1)	20	17	42	2.4	2.2
17	<u>P. richardsonii</u> (4) <u>Potamogeton</u> spp. (4) <u>Elodea</u> (3) <u>Myriophyllum</u> (2) <u>Nitella</u> (2)	730	16	24	0.9	0.4
18	<u>Chara</u> (5) <u>P. crispus</u> (1) <u>P. richardsonii</u> (1) <u>Potamogeton</u> spp. (1) <u>P. zosteriformis</u> (1)	74	3	82	0.4	0.3
19	<u>Chara</u> (1) <u>Potamogeton</u> spp. (1)	1	23	41	2.4	2.0

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Appendix K

Table 1. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stag Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
20	<u>P. richardsonii</u> (4) <u>Chara</u> (3) <u>Elodea</u> (3) <u>Potamogeton</u> spp. (2) <u>Nitella</u> (1) <u>P. crispus</u> (1) <u>P. gramineus</u> (1) <u>Vallisneria</u> (1)	201	13	42	1.1	0.6
21	<u>Chara</u> (6) <u>Elodea</u> (3) <u>P. gramineus</u> (3) <u>P. richardsonii</u> (3) <u>Myriophyllum</u> (1) <u>Najas</u> (1) <u>Potamogeton</u> spp. (1) <u>Vallisneria</u> (1)	106	4	70	0.6	0.5
22	No plants	0	32	36	3.1	2.8
23	<u>Chara</u> (3) <u>Potamogeton</u> spp. (3) <u>P. gramineus</u> (2)	44	12	42	1.6	1.1
24	No plants	0	32	41	3.4	3.0
25	<u>Chara</u> (4) <u>P. gramineus</u> (1)	16	4	68	1.7	1.2
26	No plants	0	33	50	3.4	3.2

Appendix K

Table 2. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Fawn Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	<u>Chara</u> (2) <u>P. gramineus</u> (1)	29	18	18	2.3	1.6
2	<u>Potamogeton</u> spp. (5) <u>Chara</u> (3) <u>P. gramineus</u> (2) <u>P. richardsonii</u> (2) <u>Elodea</u> (1)	71	16	35	2.1	1.4
3	<u>Chara</u> (5) <u>Potamogeton</u> spp. (2) <u>Elodea</u> (1)	33	16	24	2.3	1.6
4	<u>Potamogeton</u> spp. (4) <u>Chara</u> (3) <u>P. gramineus</u> (2)	116	12	42	2.0	1.1
5	<u>Chara</u> (2)	1	26	22	2.0	1.6
6	<u>Chara</u> (5) <u>P. gramineus</u> (4) <u>P. richardsonii</u> (2) <u>Elodea</u> (1) <u>Potamogeton</u> spp. (1)	1123	10	31	0.9	0.7
7	<u>P. gramineus</u> (5) <u>Chara</u> (4) <u>Potamogeton</u> spp. (1) <u>P. richardsonii</u> (1)	288	9	39	1.7	0.8
8	No plants	0	28	29	2.3	1.7
9	<u>Chara</u> (3) <u>Elodea</u> (1) <u>Potamogeton</u> spp. (1) <u>P. richardsonii</u> (1)	416	19	28	2.0	1.5
10	<u>Chara</u> (6) <u>Potamogeton</u> spp. (2) <u>P. gramineus</u> (1)	23	5	64	1.4	0.9
11	<u>Chara</u> (6) <u>Elodea</u> (1) <u>P. gramineus</u> (1) <u>P. richardsonii</u> (1) <u>P. zosteriformis</u> (1)	34	5	56	1.4	0.8
12	No plants	0	27	25	2.8	2.4
13	<u>Chara</u> (5) <u>P. gramineus</u> (4)	46	8	63	1.2	0.7
14	<u>Chara</u> (6) <u>P. gramineus</u> (1) <u>P. narrow</u> (1)	30	3	77	0.9	0.7
15	<u>Chara</u> (6) <u>Potamogeton</u> spp. (1)	13	4	76	1.5	1.0
16	No plants	0	34	16	2.9	2.4

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Appendix K

Table 2. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Fawn Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
17	<u>P. gramineus</u> (3) <u>Potamogeton</u> spp. (2) <u>Chara</u> (1) <u>Elodea</u> (1) <u>Ritella</u> (1) <u>Nitellopsis</u> (1) <u>P. zosteriformis</u> (1)	92	16	29	1.3	1.0
18	<u>Chara</u> (5) <u>P. gramineus</u> (3) <u>Elodea</u> (1)	48	3	59	0.8	0.6
19	No plants	0	32	26	2.9	2.4
20	<u>Chara</u> (6) <u>P. gramineus</u> (4) <u>P. richardsonii</u> (2) <u>Najas</u> (1) <u>Potamogeton</u> spp. (1)	264	4	60	0.8	0.5

Appendix K

Table 3. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Russell Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	No plants	0	31	29	3.1	2.4
2	<u>Chara</u> (1) <u>P. gramineus</u> (1) <u>Potamogeton</u> spp. (1)	23	22	24	2.8	2.0
3	<u>Potamogeton</u> spp. (2) <u>Chara</u> (1)	17	23	20	2.3	1.8
4	No plants	0	41	24	3.1	2.6
5	No plants	0	31	16	3.0	2.6
6	<u>Potamogeton</u> spp. (3) <u>Chara</u> (2) <u>P. richardsonii</u> (1)	725	11	25	2.1	1.4
7	<u>P. gramineus</u> (6) <u>Chara</u> (5) <u>Potamogeton</u> spp. (3)	508	7	30	1.9	1.1
8	No plants	0	33	36	2.4	2.1
9	<u>Chara</u> (1) <u>Elodea</u> (1)	20	28	18	2.8	2.1
10	<u>Chara</u> (5) <u>P. gramineus</u> (4) <u>Potamogeton</u> spp. (2) <u>Elodea</u> (1) <u>P. richardsonii</u> (1)	269	6	36	1.2	0.5
11	<u>Chara</u> (6) <u>P. gramineus</u> (3) <u>Najas</u> (1)	27	4	62	1.6	0.7
12	<u>Chara</u> (6) <u>P. gramineus</u> (3)	14	5	47	1.5	0.8
13	No plants	0	36	21	2.4	2.1
14	<u>Chara</u> (3) <u>P. gramineus</u> (2) <u>Potamogeton</u> spp. (1)	99	17	33	2.2	1.8

Appendix K

Table 4. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Belle Isle. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	<u>Vallisneria</u> (4) <u>Myriophyllum</u> (2) <u>P. crispus</u> (2) <u>Potamogeton</u> spp. (2) <u>P. richardsonii</u> (2) <u>Elodea</u> (1) <u>P. zosteriformis</u> (1)	882	7	19	0.8	0.4
2	<u>Chara</u> (1) <u>Potamogeton</u> spp. (1) <u>P. richardsonii</u> (1)	17	11	8	1.8	1.1
3	<u>P. crispus</u> (4) <u>Vallisneria</u> (3) <u>Chara</u> (2) <u>Potamogeton</u> spp. (2) <u>P. richardsonii</u> (2) <u>P. zosteriformis</u> (2) <u>Najas</u> (1)	142	8	18	0.6	0.5
4	No plants	0	22	3	2.5	1.8
5	No plants	0	15	4	2.6	1.9
6	No plants	0	34	2	2.8	2.4
7	<u>Chara</u> (4) <u>P. crispus</u> (4) <u>Vallisneria</u> (4) <u>Potamogeton</u> spp. (3) <u>P. richardsonii</u> (2) <u>Elodea</u> (1)	871	6	34	0.2	0.1
8	No plants	0	21	2	2.3	1.6
9	No plants	0	34	2	2.9	2.5
10	<u>Chara</u> (4) <u>P. richardsonii</u> (4) <u>Potamogeton</u> spp. (3) <u>Vallisneria</u> (3) <u>Najas</u> (1) <u>P. zosteriformis</u> (1)	27	7	36	0.4	0.3
11	No plants	0	36	2	2.9	2.5
12	<u>Vallisneria</u> (4) <u>Chara</u> (3) <u>P. richardsonii</u> (2) <u>Myriophyllum</u> (1) <u>Najas</u> (1) <u>Nitellopsis</u> (1) <u>P. gramineus</u> (1) <u>Potamogeton</u> spp. (1) <u>P. zosteriformis</u> (1)	58	10	6	1.5	1.1
13	No plants	0	34	2	2.9	2.4
14	<u>Chara</u> (6) <u>Najas</u> (3) <u>Nitellopsis</u> (3) <u>Vallisneria</u> (2) <u>Myriophyllum</u> (1)	88	3	69	0.2	0.1

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Appendix K

Table 4. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Belle Isle. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
15	Chara (6) Myriophyllum (5) Vallisneria (5) Nitelopsis (4) Najas (3) Nitella (1) P. zosteriformis (1)	157	3	49	0.2	0.1
16	Chara (6) Vallisneria (6) Myriophyllum (4) Najas (4) Nitelopsis (4) Elodea (3) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1)	265	4	37	0.3	0.2
17	Chara (6) Najas (3) Myriophyllum (2) Nitelopsis (2) Vallisneria (2) P. gramineus (1)	246	3	57	0.2	0.2
18	Chara (6) P. richardsonii (4) Vallisneria (4) Najas (3) Potamogeton spp. (3) P. zosteriformis (3) Nitelopsis (2) P. gramineus (2) Elodea (1) Nitella (1) P. crispus (1)	621	10	10	0.7	0.5
19	No plants	0	32	2	2.7	2.3
20	No plants	0	22	4	1.2	1.0
21	No plants	0	20	3	1.2	1.1
22	No plants	0	22	2	1.6	1.3
23	No plants	0	30	2	1.9	1.5
24	No plants	0	34	2	2.7	2.2

Appendix K

Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	No plants	0	33	4	1.0	0.8
2	<u>Potamogeton</u> spp. (6) <u>Vallisneria</u> (4)	826	6	22	0.3	0.1
3	No plants	0	33	4	1.0	0.7
4	<u>Potamogeton</u> spp. (4) <u>Vallisneria</u> (4) <u>P. crispus</u> (1)	920	6	19	0.2	0.1
5	<u>P. richardsonii</u> (2) <u>Vallisneria</u> (2)	51	19	11	1.4	1.1
6	<u>Potamogeton</u> spp. (2) <u>Nitella</u> (1) <u>Vallisneria</u> (1)	42	18	15	0.8	0.4
7	<u>Potamogeton</u> spp. (4) <u>Vallisneria</u> (3) <u>Ranunculus</u> (1)	917	6	19	0.3	0.1
8	<u>Vallisneria</u> (2) <u>Potamogeton</u> spp. (1) <u>P. richardsonii</u> (1)	2	18	11	1.7	1.2
9	No plants	0	31	7	1.2	0.7
10	<u>Vallisneria</u> (5) <u>Potamogeton</u> spp. (2) <u>Chara</u> (1) <u>Nitella</u> (1) <u>Nitellopsis</u> (1)	182	7	18	0.2	0.1
11	<u>Vallisneria</u> (4) <u>Chara</u> (3) <u>Potamogeton</u> spp. (3) <u>Elodea</u> (2)	581	6	20	0.4	0.2
12	<u>P. richardsonii</u> (2) <u>Vallisneria</u> (2) <u>P. zosteriformis</u> (1)	106	21	16	1.7	1.0
13	No plants	0	29	9	1.3	0.8
14	<u>Vallisneria</u> (4) <u>Potamogeton</u> spp. (2) <u>Chara</u> (1) <u>Heteranthera</u> (1) <u>Nitella</u> (1) <u>Nitellopsis</u> (1)	198	7	28	0.2	0.1
15	<u>Chara</u> (4) <u>Vallisneria</u> (4) <u>Nitella</u> (2) <u>Potamogeton</u> spp. (2) <u>Myriophyllum</u> (1) <u>P. crispus</u> (1)	163	6	28	0.4	0.2
16	<u>Vallisneria</u> (2) <u>Chara</u> (1) <u>P. gramineus</u> (1) <u>Potamogeton</u> spp. (1) <u>P. zosteriformis</u> (1)	92	18	15	1.2	0.6
17	No plants	0	28	5	1.0	0.6

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Appendix K

Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
18	<u>Vallisneria</u> (4) <u>Chara</u> (3) <u>Myriophyllum</u> (1) <u>Nitella</u> (1) <u>Potamogeton</u> spp. (1)	120	7	26	0.2	0.2
19	<u>Chara</u> (5) <u>Vallisneria</u> (4) <u>Potamogeton</u> spp. (2) <u>Nitella</u> (1) <u>P. richardsonii</u> (1)	169	6	34	0.2	0.1
20	<u>P. richardsonii</u> (1) <u>Vallisneria</u> (1)	19	22	13	1.1	0.7
21	No plants	0	28	6	1.2	0.8
22	<u>Vallisneria</u> (4) <u>Potamogeton</u> spp. (3) <u>Chara</u> (3) <u>Heteranthera</u> (1) <u>P. richardsonii</u> (1)	174	7	23	0.3	0.2
23	<u>Chara</u> (4) <u>Vallisneria</u> (4) <u>Myriophyllum</u> (3) <u>Potamogeton</u> spp. (3) <u>Elodea</u> (1) <u>Heteranthera</u> (1)	266	6	30	0.4	0.2
24	<u>Najas</u> (2) <u>P. richardsonii</u> (2) <u>Vallisneria</u> (2) <u>P. zosteriformis</u> (1)	101	23	8	1.2	0.9
25	No plants	0	27	6	1.1	0.6
26	<u>Vallisneria</u> (5) <u>Chara</u> (3) <u>Potamogeton</u> spp. (2) <u>Heteranthera</u> (1) <u>Myriophyllum</u> (1) <u>Nitella</u> (1)	232	9	16	0.3	0.2
27	<u>Vallisneria</u> (4) <u>Chara</u> (3) <u>Myriophyllum</u> (1) <u>Potamogeton</u> spp. (1) <u>Najas</u> (1) <u>P. crispus</u> (1)	215	6	20	0.2	0.1
28	No plants	0	32	6	1.9	1.4
29	No plants	0	23	5	1.2	0.4
30	<u>Vallisneria</u> (3) <u>Chara</u> (2) <u>Potamogeton</u> spp. (2) <u>Nitella</u> (1)	61	15	16	0.5	0.2
31	<u>Vallisneria</u> (4) <u>Chara</u> (2) <u>Potamogeton</u> spp. (2) <u>Myriophyllum</u> (1) <u>Nitella</u> (1)	227	6	19	0.3	0.1
32	No plants	0	33	7	2.0	1.4

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Appendix K

Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid Intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
33	<u>Chara</u> (1) <u>Potamogeton</u> spp. (1) <u>Vallisneria</u> (1)	28	20	14	0.5	0.3
34	<u>Vallisneria</u> (5) <u>P. crispus</u> (2) <u>Potamogeton</u> spp. (2) <u>Chara</u> (1) <u>Myriophyllum</u> (1) <u>P. gramineus</u> (1) <u>P. richardsonii</u> (1)	295	8	8	0.5	0.2
35	No plants	0	32	4	2.0	1.5
36	<u>Vallisneria</u> (2) <u>Potamogeton</u> spp. (1)	38	21	10	0.7	0.4
37	<u>Vallisneria</u> (2) <u>Potamogeton</u> spp. (1) <u>P. richardsonii</u> (1)	347	22	7	0.9	0.6
38	No plants	0	32	7	2.2	1.6
39	No plants	0	23	4	1.1	0.6
40	No plants	0	28	7	1.8	1.5

Appendix K

Table 6. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stony Island. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	<u>Vallisneria</u> (4) <u>Potamogeton</u> spp. (2) <u>Myriophyllum</u> (1) <u>P. zosteriformis</u> (1)	203	9	6	1.3	0.7
2	<u>Potamogeton</u> spp. (5) <u>Vallisneria</u> (4) <u>P. richardsonii</u> (1)	620	8	9	1.0	0.6
3	<u>Vallisneria</u> (5) <u>Potamogeton</u> spp. (3) <u>Myriophyllum</u> (1) <u>P. crispus</u> (1) <u>P. zosteriformis</u> (1)	345	8	13	0.8	0.4
4	<u>Vallisneria</u> (5) <u>Potamogeton</u> spp. (3) <u>Myriophyllum</u> (2) <u>Elodea</u> (1)	314	10	9	0.5	0.2
5	<u>Vallisneria</u> (3) <u>Potamogeton</u> spp. (2) <u>Elodea</u> (1) <u>Heteranthera</u> (1) <u>Myriophyllum</u> (1) <u>P. crispus</u> (1) <u>P. richardsonii</u> (1)	333	10	9	0.6	0.3
6	<u>P. zosteriformis</u> (2) <u>Potamogeton</u> spp. (1) <u>Vallisneria</u> (1)	41	11	14	1.8	1.1
7	<u>Potamogeton</u> spp. (5) <u>Vallisneria</u> (4) <u>Heteranthera</u> (1)	869	7	9	1.0	0.4
8	<u>Vallisneria</u> (3) <u>Heteranthera</u> (1) <u>P. crispus</u> (1) <u>Potamogeton</u> spp. (1)	84	8	16	1.4	1.0
9	<u>Heteranthera</u> (2) <u>Myriophyllum</u> (2) <u>P. crispus</u> (1) <u>Potamogeton</u> spp. (1) <u>Vallisneria</u> (1)	38	8	29	0.4	0.2
10	<u>P. crispus</u> (1)	1	10	8	0.4	0.2
11	<u>Vallisneria</u> (3) <u>Potamogeton</u> spp. (1)	31	9	13	1.3	0.7
12	<u>Elodea</u> (4) <u>Heteranthera</u> (4) <u>Myriophyllum</u> (4) <u>P. crispus</u> (3) <u>Vallisneria</u> (3)	1667	4	32	0.2	0.1
13	<u>Elodea</u> (5) <u>Heteranthera</u> (3) <u>P. crispus</u> (3) <u>Butomus</u> (1) <u>Vallisneria</u> (1)	1866	3	31	0.1	0.0

CONTINUED

Appendix K

Table 6. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stony Island. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
14	No plants	0	10	8	2.6	1.6
15	<u>Vallisneria</u> (4) <u>Butomus</u> (1) <u>Heteranthera</u> (1) <u>P. crispus</u> (1) <u>Potamogeton</u> spp. (1)	146	6	17	1.5	0.8
16	<u>Heteranthera</u> (3) <u>P. crispus</u> (2) <u>Myriophyllum</u> (1)	2554	3	36	0.3	0.3
17	<u>Elodea</u> (4) <u>Heteranthera</u> (3) <u>Myriophyllum</u> (1) <u>P. crispus</u> (1) <u>Ranunculus</u> (1) <u>Jyphe</u> (1)	895	2	56	0.2	0.1
18	No plants	0	8	22	2.3	1.4
19	<u>Vallisneria</u> (5) <u>Heteranthera</u> (2) <u>Myriophyllum</u> (1)	50	3	48	1.2	0.6
20	<u>Heteranthera</u> (2) <u>Vallisneria</u> (2) <u>P. crispus</u> (1)	11	6	27	2.4	1.7

APPENDIX L

Ponar Grab Collections of Submersed Macrophytes

SUBMERSED MACROPHYTE PONAR DATA. JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE BOTTOM	SURFACE BOTTOM
ST. CLAIR STAG	1		1	309026 497383	12.0	NO PLANTS PRESENT	3200	1900	2.1 1.0
			2	309026 497383	12.0	NO PLANTS PRESENT	3000	2400	2.2 1.2
			3	309027 497384	12.0	NO PLANTS PRESENT	3500	2200	2.1 1.2
			4	309027 497384	11.0	NO PLANTS PRESENT	3400	2100	2.3 1.3
	2		1	309041 497387	12.0	NO PLANTS PRESENT	3200	2300	2.4 1.0
			2	309041 497387	12.0	NO PLANTS PRESENT	3400	2300	2.5 1.5
			3	309041 497388	12.0	NO PLANTS PRESENT	3500	2400	2.2 1.0
			4	309042 497388	12.0	NO PLANTS PRESENT	3100	2200	1.9 1.3
	3		1	309031 497388	9.0	NO PLANTS PRESENT	3400	2100	2.1 1.3
			2	309031 497388	9.0	NO PLANTS PRESENT	4100	2900	2.4 1.5
			3	309030 497388	8.0	NO PLANTS PRESENT	3500	2200	2.4 1.4
			4	309030 497390	8.0	NO PLANTS PRESENT	3600	2200	2.0 1.1
	4		1	309038 497394	13.0	NO PLANTS PRESENT	3200	2100	1.8 0.9
			2	309041 497394	13.0	NO PLANTS PRESENT	3500	2200	2.0 1.2
			3	309042 497395	12.0	NO PLANTS PRESENT	3300	2200	2.0 1.3
			4	309042 497395	11.0	NO PLANTS PRESENT	3300	2300	2.1 1.5
	5		1	309037 497397	5.5	CHARA SPP. POT. NARROW	6.7 30.4	3.2 2100	1.6 1.4
						POT. GRAMINEUS	14.4 7.8		
			2	309035 497397	6.0	POT. NARROW	15.2 10.7	4000 2500	2.0 1.6
						POT. GRAMINEUS	7.4 4.6		
						POT. RICHARDSONI	10.6 7.1		
			3	309035 497396	6.0	POT. NARROW	38.4 26.4	3700 2700	2.1 0.9
			4	309036 497398	6.0	CHARA SPP. POT. NARROW	7.4 73.0	2.9 3500	2.1 1.3
						POT. GRAMINEUS	8.7 4.4		
			1	309041 497398	9.0	CHARA SPP. POT. NARROW	32.4 13.9	7.5 3600	2.4 1.0
			2	309042 497400	9.0	CHARA SPP. POT. NARROW	6.1 48.3	3.8 3900	2.4 1.5
			3	309043 497400	7.0	CHARA SPP. POT. NARROW	18.9 6.2	8.1 3800	2.2 0.6
			4	309043 497401	6.0	CHARA SPP. POT. NARROW	4.4 36.2	1.8 3100	1.9 1.6
			5	309042 497400	7.5	POT. GRAMINEUS	9.9 68.5	6.6 3700	1300 -
			6	309042 497401	6.5	CHARA SPP. POT. GRAMINEUS	127.1 5.0	31.8 3700	1300 -

7	1	309039	497401	8.0	CHARA SPP. ELODEA CANADENS POT. NARROW	26.3 22.8 5.2	15.1 15.3 4.1	2700	0.8	0.4
	2	309034	497398	4.5	POT. NARROW POT. GRAMINEUS	8.5 49.0	5.8 23.7	2500	1.4	1.3
	3	309035	497399	4.0	CHARA SPP. POT. NARROW	21.5 41.7	5.6 29.0	2900	1.1	0.5
	4	309035	497399	4.0	CHARA SPP. POT. RICHARDSONI	1.5 43.4	0.6 14.9	2600	1.4	0.9
	1	309044	497403	8.5	CHARA SPP. ELODEA CANADENS POT. NARROW MYRIO. EXALBESC	0.8 5.4 6.5 8.1	0.5 3.7 4.7 6.7	1900	1.2	0.9
	2	309044	497405	9.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	1.0 44.2 7.7	0.6 34.5 3.9	2200	0.9	0.4
	3	309044	497403	10.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI	11.2 63.0 6.0	6.6 39.0 4.9	2200	1.4	0.7
	4	309046	497404	7.0	POT. NARROW	159.0	124.4	3100	1400	-
	5	309045	497403	7.0	POT. NARROW	55.2	41.7	3100	1400	-
	6	309046	497403	7.0	POT. NARROW	111.1	84.6	3100	1400	-
	7	309045	497404	7.0	POT. NARROW NITELLA HYALINA POT. GRAMINEUS	24.8 58.0 0.7	17.6 19.5 0.5	2500	1300	-
	8	309046	497403	7.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	0.2 0.1 20.9	0.0 0.1 10.1	2500	1300	-
	9	309046	497403	7.5	POT. NARROW POT. GRAMINEUS	32.5 22.2	25.6 15.2	2500	1300	-
	10	309045	497406	9.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI	7.9 45.9 4.6	4.4 34.1 3.6	3000	2000	1.0
	1	309037	497403	11.0	CHARA SPP. ELODEA CANADENS POT. NARROW	21.4 65.9 2.3	11.2 39.5 1.5	2500	1900	0.5
	2	309043	497403	9.5	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	14.0 6.6 27.7 18.8	7.2 4.3 23.1 13.1	4500	2300	1.7
	3	309044	497406	10.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM	14.7 36.6 40.1	7.5 19.3 29.0	3100	2000	0.9

4	309035	497404	4.0	CHARA SPP.	93.4	34.7	2900	2700	0.1	0.1	
10	1	309056	497412	12.0	CHARA SPP.	25.3	11.9	2500	2000	1.5	0.7
	2	309054	497412	9.0	CHARA SPP.	19.1	8.6	1900	1800	1.5	0.9
				ELODEA CANADENS	TRACE						
				POT. NARROW	0.9	0.6					
3	309056	497412	11.0	CHARA SPP.	12.0	6.5	3600	2100	0.9	0.3	
4	309055	497411	8.0	CHARA SPP.	12.9	8.2	3000	2300	1.7	0.8	
11	1	309099	497410	4.0	CHARA SPP.	14.8	6.7	3200	1000	1.2	0.7
	2	309050	497411	3.0	CHARA SPP.	4.6	2.9	2500	700	0.9	0.5
	3	309048	497411	10.0	CHARA SPP.	TRACE		3700	1800	0.4	0.1
				ELODEA CANADENS	2.3	1.6					
				POT. NARROW	39.4	28.3					
				MYRIO. SPICATUM	47.6	35.8					
				POT. CRISPUS	12.6	10.7					
4	309052	497413	4.0	CHARA SPP.	34.4	14.0	3500	2800	1.2	0.9	
5	309048	497411	9.5	ELODEA CANADENS	125.9	83.5	3200	1300	-	-	
				NITELLA HYALINA	1.8	0.9					
6	309048	497411	6.5	ELODEA CANADENS	248.3	160.9	3200	1300	-	-	
				POT. NARROW	23.1	17.9					
				POT. RICHARDSONI	3.4	2.8					
12	1	309039	497408	12.0	ELODEA CANADENS	83.3	55.7	2900	1300	0.6	0.3
				NITELLA HYALINA	6.9	3.5					
				POT. CRISPUS	43.1	37.8					
2	309038	497408	9.0	CHARA SPP.	3.8	1.9	3000	1700	0.7	0.3	
				ELODEA CANADENS	78.9	53.0					
				MYRIO. SPICATUM	2.7	2.2					
				POT. CRISPUS	20.3	14.2					
3	309039	497407	10.0	ELODEA CANADENS	22.7	15.1	3300	1500	0.3	0.3	
				MYRIO. SPICATUM	17.0	12.2					
4	309039	497407	4.0	CHARA SPP.	37.7	13.6	3700	2900	0.4	0.3	
5	309039	497408	3.0	CHARA SPP.	56.3	17.9	3500	2400	-	-	
6	309039	497407	4.0	CHARA SPP.	174.1	58.7	3500	2400	-	-	
13	1	309058	497414	12.0	ELODEA CANADENS	21.3	12.8	340	170	1.0	0.1
				MYRIO. SPICATUM	2.7	1.8					
				POT. CRISPUS	28.3	14.7					
2	309058	497416	9.0	ELODEA CANADENS	36.3	15.7	570	250	1.0	0.1	
				POT. NARROW	2.5	1.9					
				MYRIO. SPICATUM	3.7	2.6					
3	309058	497414	12.0	CHARA SPP.	0.2	0.2	700	450	0.1	0.1	
				ELODEA CANADENS	39.8	25.8					
				POT. NARROW	7.5	5.8					

			POT. CRISPUS	27.3	21.3				
			POT. ZOSTERIFORM	7.4	5.4				
4	309060	497416	10.5	CHARA SPP.	0.8	0.5	2300	600	2.0
				ELODEA CANADENS	20.9	12.7			0.1
				POT. NARROW	3.2	2.5			
				MYRIO. SPICATUM	1.1	0.6			
				POT. CRISPUS	110.3	76.1			
14	1	309069	497422	6.0	CHARA SPP.	7.1	3.1	250	160
									2.5
									0.7
2	309070	497424	6.0	CHARA SPP.	20.9	7.9	180	130	2.4
									0.2
3	309072	497424	7.0	CHARA SPP.	11.6	7.7	210	140	2.3
									0.3
4	309073	497425	7.0	POT. NARROW	14.3	8.1	260	140	1.9
				POT. GRAMINEUS	25.4	11.6			1.1
5	309079	497425	6.0	CHARA SPP.	10.8	3.0	2600	1300	-
				POT. GRAMINEUS	6.3	5.1			-
6	309078	497425	6.0	POT. NARROW	19.7	14.3	2600	1300	-
15	1	309075	497429	3.0	CHARA SPP.	5.4	3.7	230	190
									1.2
2	309075	497431	3.5	CHARA SPP.	31.7	12.9	260	210	0.8
									0.8
3	309075	497430	3.5	CHARA SPP.	54.3	22.4	240	180	0.7
				POT. GRAMINEUS	1.4	1.1			0.4
4	309077	497433	2.5	CHARA SPP.	3.0	1.3	320	240	1.2
				POT. NARROW	27.0	18.6			0.7
				POT. GRAMINEUS	8.3	3.1			

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK	REPLICATE	UPPER	LOWER	DEPTH	MACROPHYTE	DRY WEIGHT	ASH-FREE LIGHT	WEIGHT	CURRENT
			NO.			(FT.)	TAXON	(G/M2)	(FOOT CANDLES)	(G/M2)	(FT./SEC.)
										SURFACE	BOTTOM
ST. CLAIR FAWN	1	1	309569	498251	10.0	CHARA SPP.	POT. NARROW	69.3	26.2	3000	1000
							POT. GRAMINEUS	17.3	9.4		
							POT. GRAMINEUS	73.3	39.2		
	2	2	309570	498252	9.5	POT. GRAMINEUS	POT. RICHARDSONI	57.2	30.0	3200	900
								2.6	2.1		
	3	3	309571	498252	8.5	CHARA SPP.	POT. GRAMINEUS	22.6	6.2	3400	1000
								33.6	21.0		
	4	4	309570	498251	9.5	POT. GRAMINEUS	POT. GRAMINEUS	72.1	46.5	3500	1700
							POT. RICHARDSONI	4.0	2.8		
	2	1	309572	498255	8.0	CHARA SPP.	POT. GRAMINEUS	8.5	2.0	4300	1800
								16.4	8.9		
	2	2	309570	498255	8.0	POT. NARROW	POT. GRAMINEUS	1.9	1.2	4400	2100
							POT. RICHARDSONI	5.0	3.3		
							POT. RICHARDSONI	4.0	2.8		
	3	3	309571	498256	8.0	CHARA SPP.	POT. RICHARDSONI	10.8	4.9	4000	1900
							POT. NARROW	5.8	2.0		
							POT. NARROW	147.3	91.4		
	4	4	309571	498257	9.0	POT. NARROW	POT. RICHARDSONI	101.1	41.2	4200	1700
							POT. RICHARDSONI	28.7	14.8		
	5	5	309572	498257	8.5	POT. NARROW	POT. NARROW	2.8	1.0	1000	580
							NITELLA HYALINA	0.8	0.5		
							POT. RICHARDSONI	65.4	48.7		
	6	6	309571	498257	9.0	POT. NARROW	POT. NARROW	12.0	9.4	1000	580
							NITELLA HYALINA	56.8	20.6		
							POT. GRAMINEUS	23.4	16.6		
	3	1	309578	498255	9.0	CHARA SPP.	POT. RICHARDSONI	4.3	1.9	3500	1900
								104.6	70.2		
	2	2	309579	498255	8.0	POT. GRAMINEUS	POT. GRAMINEUS	4.3	2.0	3200	1900
							POT. GRAMINEUS	1.9	1.2	3600	2000
							POT. GRAMINEUS	16.4	9.7		
	4	4	309584	498259	7.0	CHARA SPP.	POT. GRAMINEUS	5.5	2.9	4200	2000
							POT. GRAMINEUS	17.2	11.0		
	4	1	309573	498259	6.0	CHARA SPP.	POT. GRAMINEUS	52.6	22.8	3000	1800
								9.0	6.1		
	2	2	309574	498260	5.5	CHARA SPP.	POT. GRAMINEUS	2.9	1.2	3200	2100
							POT. GRAMINEUS	16.0	7.7		
	3	3	309575	498259	6.0	CHARA SPP.	POT. GRAMINEUS	0.7	0.1	3500	2300

4	309579	498261	5.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	77.2 3.6 41.0	20.5 2.2 31.7	2300	2.0	1.7	
5	309573	498260	4.5	CHARA SPP.	77.8	23.2	1300	1000	-	
6	309574	498261	7.0	CHARA SPP. NITELLA HYALINA POT. RICHARDSONI	6.0 1.2 76.2	2.7 0.4 62.9	1300	680	-	
7	309574	498261	7.5	CHARA SPP. POT. GRAMINEUS	249.0 37.2	82.8 27.4	1300	680	-	
8	309575	498261	5.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	1.1 39.2 28.3	0.3 31.7 22.5	1400	590	-	
9	309575	498261	5.0	CHARA SPP. POT. NARROW	85.6 68.3	23.0 50.8	1400	590	-	
5	1	309588	498260	7.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	10.0 4.0 10.5	5.0 2.7 7.1	3300	1600	1.7
2	309589	498261	8.0	POT. NARROW POT. GRAMINEUS POT. RICHARDSONI	9.5 10.4 1.1	6.2 6.5 0.9	3500	1500	1.6	
3	309590	498260	11.0	ELODEA CANADENSIS POT. RICHARDSONI POT. NARROW	11.0 16.7 1.8	8.7 8.3 1.1	3600	1300	1.9	
4	309592	498262	12.0	CHARA SPP. ELODEA CANADENSIS POT. RICHARDSONI	1.2 1.5 13.7	0.6 0.8 6.3	3000	1300	1.8	
6	1	309586	498263	4.0	CHARA SPP.	16.0	8.6	2600	1900	1.8
2	309586	498262	4.0	CHARA SPP.	14.9	8.5	3500	2000	1.5	
3	309587	498263	4.0	CHARA SPP.	1.0	0.6	3000	1900	1.4	
4	309587	498265	4.0	CHARA SPP.	12.4	6.3	3200	2200	1.5	
7	1	309577	498265	4.0	CHARA SPP.	9.0	4.5	2300	1800	1.8
2	309578	498266	3.5	CHARA SPP.	10.6	4.4	2400	1700	2.0	
3	309578	498267	4.0	CHARA SPP.	14.0	6.2	2700	1900	1.6	
4	309579	498270	4.0	NO PLANTS PRESENT			2700	2100	1.6	
8	1	309600	498270	4.5	CHARA SPP. POT. GRAMINEUS	25.9 0.9	11.7 0.6	2800	1700	1.8
2	309601	498270	4.0	CHARA SPP.	37.2	22.2	2700	1800	1.6	
3	309602	498272	5.5	CHARA SPP. POT. NARROW POT. GRAMINEUS	11.9 1.5 0.4	8.3 1.2 0.3	2700	1500	1.6	

4	309603	498272	5.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	18.8 1.3 2.2	11.6 1.0 1.7	1500	1.7	1.2		
9	1	309596	498271	3.0	CHARA SPP.	6.6	4.1	2400	2100	1.4	0.9
2	309596	498274	2.5	CHARA SPP. POT. GRAMINEUS	16.8 0.9	9.5 0.7	2600	2200	1.2	1.2	
3	309598	498274	2.5	CHARA SPP.	18.2	10.0	2400	2100	1.3	1.2	
4	309600	498274	3.0	CHARA SPP.	8.4	5.2	2300	1900	1.4	1.1	
10	1	309621	498285	8.5	CHARA SPP. POT. CRISPUS POT. GRAMINEUS	1.7 0.2 0.6	0.8 0.1 0.5	3000	900	1.4	1.1
2	309625	498287	11.5	CHARA SPP.	7.5	4.1	3000	900	1.3	1.1	
3	309624	498287	8.5	CHARA SPP.	23.5	10.8	2900	900	1.3	1.1	
4	309624	498287	8.0	CHARA SPP. POT. GRAMINEUS	11.4 4.3	5.1 2.8	3100	900	1.5	1.3	
11	1	309611	498279	2.5	CHARA SPP.	10.7	6.0	3000	2500	0.7	0.4
2	309613	498279	3.0	CHARA SPP.	48.0	22.6	3000	2500	1.3	0.9	
3	309613	498280	3.5	CHARA SPP.	41.4	20.3	3200	2600	1.4	0.7	
4	309615	498282	4.0	CHARA SPP.	97.4	34.1	3100	2100	1.2	0.8	

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.) SURFACE	BOTTOM
ST. CLAIR	RUSSELL	1	1	309950	498655	8.0	POT. NARROW POT. GRAMINEUS	18.5 8.4	14.2 5.1		800	800	1.5	0.3
		2	309951	498655	7.0	POT. NARROW POT. RICHARDSONI	83.8 14.3	65.9 11.0			800	800	2.1	0.7
		3	309953	498657	7.5	CHARA SPP. POT. NARROW POT. GRAMINEUS	12.1 15.3 23.9	4.6 11.0 11.9			800	800	1.5	0.7
		4	309954	498657	7.0	POT. NARROW POT. RICHARDSONI	45.3 3.1	32.9 2.6			900	900	1.9	1.8
		2	309941	498653	9.0	CHARA SPP.	79.6	39.0			1100	1100	2.4	1.1
		2	309943	498654	8.5	CHARA SPP. POT. NARROW	65.0 2.7	29.8 2.2			1100	1100	2.4	1.5
		3	309944	498655	8.0	CHARA SPP.	121.6	62.6			1100	1100	2.2	1.0
		4	309946	498655	8.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	71.1 7.6 20.7	33.6 5.4 12.2			1200	1200	2.1	1.2
		3	309964	498660	11.0	CHARA SPP.	7.7	4.8			800	800	2.0	0.4
		2	309964	498659	11.5	CHARA SPP. ELODEA CANADENS	6.3 93.5	3.3 58.5			800	800	2.1	0.9
		3	309966	498660	12.0	CHARA SPP. ELODEA CANADENS	8.1 99.1	4.6 66.2			900	900	2.0	1.7
		4	309967	498660	12.0	CHARA SPP. ELODEA CANADENS	24.3 87.7	13.2 59.2			700	700	1.3	0.9
		4	309958	498660	7.5	CHARA SPP. ELODEA CANADENS	2.2 35.8	1.3 28.3			800	800	2.1	0.8
		2	309958	498659	7.5	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI	76.1 77.9 14.3	43.8 56.2 10.9			900	900	2.0	0.7
		3	309960	498659	8.0	CHARA SPP. ELODEA CANADENS POT. NARROW MYRIO. SPICATUM	21.0 33.0 2.0 81.0	11.3 18.4 1.5 66.0			1100	1100	1.8	1.3
		4	309961	498659	8.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI	8.6 126.9 5.4	4.5 80.9 2.8			1000	1000	2.1	0.5

5	309957	498658	8.5	CHARA SPP. ELODEA CANADENS POT. NARROW POT. RICHARDSONI	7.5 5.4 20.6 38.2	3.7 3.7 14.9 30.1	1700	-
6	309959	498660	9.5	POT. NARROW POT. RICHARDSONI	3.9 36.3	3.0 28.3	1700	-
5	309951	498660	6.5	CHARA SPP. POT. NARROW POT. GRAMINEUS	35.9 19.7 4.5	18.2 16.1 3.3	900	1.7 1.3
2	309952	498660	6.0	CHARA SPP. POT. NARROW	110.8 19.6	67.4 14.9	900	1.0 0.1
3	309953	498660	5.0	POT. NARROW POT. GRAMINEUS	58.7 7.5	47.4 5.6	1100	2.1 0.8
4	309954	498660	5.0	CHARA SPP. POT. NARROW	123.4 25.9	70.3 20.1	1300	1.9 1.0
5	309955	498659	7.0	CHARA SPP. ELODEA CANADENS POT. NARROW POT. RICHARDSONI	6.4 0.7 71.9 55.5	3.1 0.5 54.7 46.0	1100	-
6	309955	498659	7.5	POT. RICHARDSONI POT. NARROW	93.1 9.9	70.1 7.5	1100	-
6	309946	498661	5.0	CHARA SPP.	33.6	20.8	2700 1000	1.5 0.5
2	309947	498663	5.0	CHARA SPP.	48.0	27.3	1900 1100	1.8 0.3
3	309947	498662	5.0	CHARA SPP.	29.8	17.8	2500 1100	1.6 1.5
4	309949	498664	5.0	CHARA SPP.	31.8	16.7	2800 1200	1.7 0.1
7	309967	498665	5.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	99.9 28.8 3.8	49.2 23.6 3.0	1700 900	1.4 0.5
2	309968	498665	4.0	CHARA SPP. POT. NARROW	117.2 2.8	61.6 2.4	1800 1000	1.3 1.0
3	309970	498665	4.5	CHARA SPP.	109.4	63.3	1800 1100	1.2 0.3
4	309968	498664	4.5	CHARA SPP. POT. NARROW	39.4 221.9	18.3 175.2	2400 1400	1.3 0.4
5	309971	498664	5.5	CHARA SPP. POT. NARROW POT. GRAMINEUS	47.0 30.6 25.9	19.9 23.7 18.9	3700 3300	-
6	309969	498666	5.0	CHARA SPP. ELODEA CANADENS POT. NARROW POT. GRAMINEUS	69.0 TRACE 37.2 28.7	22.6 28.6 21.2	3700 3300	-
8	309958	498665	4.0	CHARA SPP.	79.4	42.5	2400 900	1.7 1.1

2	309960	498666	4.0	CHARA SPP. POT. GRAMINEUS	102.3 2.8	47.0 1.6	2300	1000	2.0	1.5	
3	309961	498665	4.0	CHARA SPP.	106.5	55.6	1800	1000	1.9	1.7	
4	309963	498664	4.0	CHARA SPP. POT. NARROW	41.9 202.2	20.5 155.7	1600	1000	2.0	1.7	
5	309963	498665	4.5	POT. NARROW NITELLA HYALINA POT. GRAMINEUS	11.3 78.0 25.0	9.1 29.7 18.3	1100	950	-	-	
6	309964	498664	5.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	67.9 17.8 24.0	28.3 14.5 19.5	1100	950	-	-	
9	1	309951	498664	4.0	CHARA SPP.	25.0	13.4	2200	1000	1.5	1.1
2	309955	498665	3.5	CHARA SPP. POT. NARROW POT. GRAMINEUS	1.8 12.0 7.4	0.8 8.5 5.4	2000	1000	1.0	0.8	
3	309954	498665	4.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	5.3 87.4 15.6	2.5 67.8 9.8	2300	900	0.7	0.2	
4	309956	498665	4.0	CHARA SPP. POT. NARROW POT. GRAMINEUS	0.8 127.6 7.9	0.7 98.6 5.9	2500	1300	0.8	0.5	
5	309951	498668	4.5	CHARA SPP.	87.6	30.7	3700	3500	-	-	
6	309951	498668	4.5	CHARA SPP. POT. GRAMINEUS	73.5 8.1	27.1 6.1	3700	3500	-	-	

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

L-17

		POT. NARROW	0.9	0.5					
		MYRIO. SPICATUM	0.2	0.0					
		POT. NARROW	1.4	1.0					
		VALLISNERIA AMER	0.7	0.6					
2	312786 499971	9.5	58.4	-0.1	450	21	0.7	0.5	
		NITELLA HYALINA	3.0	1.9					
		POT. NARROW	5.8	4.0					
		VALLISNERIA AMER							
3	312786 499972	9.5	41.1	10.2	450	21	0.7	0.5	
		CHARA SPP.	0.8	0.5					
		POT. NARROW	2.8	2.0					
		VALLISNERIA AMER							
5	1	312802 499983	7.5	24.2	16.8	550	25	0.8	0.7
		NITELLA HYALINA	40.0	8.5					
2	312807 499983	8.0	0.7	0.5	550	25	0.8	0.7	
		POT. CRISPUS	0.5	0.2					
		POT. NARROW	8.3	4.1					
		VALLISNERIA AMER							
3	312802 499982	11.0	7.1	2.1	550	25	0.8	0.7	
		NITELLA HYALINA	1.0	0.7					
		POT. NARROW	6.4	3.4					
		VALLISNERIA AMER							
6	1	312809 499987	9.5	1.6	0.3	380	30	1.2	0.9
		NITELLA HYALINA	8.6	3.9					
		POT. GRAMINEUS	1.3	0.0					
		VALLISNERIA AMER							
2	312809 499987	9.5	0.3	0.0	330	33	1.2	0.9	
		CHARA SPP.	7.4	6.9					
		POT. GRAMINEUS	0.2	0.1					
		POT. NARROW	1.0	0.5					
		VALLISNERIA AMER							
3	312809 499985	9.5	5.7	1.2	330	33	1.2	0.9	
		CHARA SPP.	1.0	0.5					
		POT. NARROW	5.9	4.1					
		POT. RICHARDSONI	1.9	1.3					
		VALLISNERIA AMER							
7	1	312853 499997	3.5	186.7	83.3	400	170	0.1	0.0
		CHARA SPP.	62.6	14.0	400	170	0.1	0.0	
2	312853 499994	3.0	0.6	0.3					
		CHARA SPP.							
		VALLISNERIA AMER							
3	312853 499995	3.5	33.1	6.7	400	170	0.1	0.0	
		NITELLA HYALINA	61.1	36.1	170	56	0.3	0.2	
8	1	312845 499996	2.0	48.8	17.5				
		MYRIO. SPICATUM	2.0	1.6					
		NITELLA HYALINA							
		VALLISNERIA AMER							
2	312845 499996	2.0	27.2	17.1	170	56	0.3	0.2	
		MYRIO. SPICATUM	53.7	21.5					
		NITELLA HYALINA	TRACE						
		POT. NARROW	TRACE						
		VALLISNERIA AMER							
3	312845 499996	2.0	47.9	27.5	170	56	0.3	0.2	
		MYRIO. SPICATUM	19.5	6.7					
		NITELLA HYALINA	0.7	0.4					
		VALLISNERIA AMER							
9	1	312837 499995	6.5	TRACE	100	30	0.3	0.3	
		ELODEA CANADENSIS	116.8	33.1					
		NITELLA HYALINA							

2	312836	499994	6.5	CHARA SPP.	170.7	55.0	100	30	0.3	0.3	
3	312838	499995	6.5	CHARA SPP.	166.1	66.5	100	30	0.3	0.3	
				VALLISNERIA AMER	0.3	0.1					
4	312835	499998	9.5	MYRIO. SPICATUM	TRACE		220	38	0.8	0.7	
				NITELLA HYALINA	28.7	7.7					
				POT. RICHARDSONI	11.2	9.3					
				POT. NARROW	8.8	6.9					
				VALLISNERIA AMER	3.6	2.6					
5	312836	499996	10.0	NITELLA HYALINA	10.1	2.6	220	38	0.8	0.7	
				POT. RICHARDSONI	22.9	17.2					
				POT. NARROW	5.1	2.5					
6	312836	499995	10.0	ELODEA CANADENS	0.9	0.5	220	38	0.8	0.7	
				NITELLA HYALINA	24.5	5.7					
				POT. NARROW	5.8	3.2					
				VALLISNERIA AMER	4.4	3.3					
7	312835	499995	10.0	NITELLA HYALINA	27.0	7.1	220	38	0.8	0.7	
				POT. NARROW	19.3	12.1					
				VALLISNERIA AMER	1.9	1.4					
8	312835	499995	10.0	NITELLA HYALINA	31.3	8.7	220	38	0.8	0.7	
				POT. RICHARDSONI	1.6	1.0					
				POT. NARROW	7.9	5.4					
				VALLISNERIA AMER	8.6	6.2					
9	312839	499997	10.0	NITELLA HYALINA	82.3	43.2	220	38	0.8	0.7	
				POT. RICHARDSONI	12.8	10.7					
				POT. NARROW	5.0	3.5					
				VALLISNERIA AMER	0.1	0.1					
10	1	312827	499992	6.5	NITELLA HYALINA	49.8	4.0	560	100	0.9	0.8
				POT. NARROW	0.5	0.3					
				VALLISNERIA AMER	1.2	0.8					
2	312827	499992	6.5	CHARA SPP.	25.2	5.9	560	100	0.9	0.8	
				POT. GRAMINEUS	3.1	2.3					
				POT. NARROW	TRACE						
				VALLISNERIA AMER	1.5	1.0					
3	312827	499992	6.5	NITELLA HYALINA	69.8	17.7	560	100	0.9	0.8	
				POT. CRISPUS	0.5	0.4					
				POT. NARROW	3.3	2.4					

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE BOTTOM	SURFACE BOTTOM
DETROIT	HENNEPIN	1	1	314069 500673	6.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	TRACE 32.6 3.6	3400 1100	0.4 0.1
		2	1	314070 500673	5.0	POT. NARROW VALLISNERIA AMER	10.8 5.4	7.5 3400 1300	0.4 0.1
		3	1	314067 500674	6.0	POT. NARROW	36.7	23.8 3500 1500	0.4 0.2
		4	1	314069 500672	6.0	POT. NARROW	12.2	9.1 3800 1800	0.3 0.2
		2	1	314064 500680	8.0	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	1.8 4.3 5.1	1.3 3500 620	0.5 0.0
		2	1	314065 500680	8.0	POT. NARROW	25.8	17.1 3500 1200	0.3 0.2
		3	1	314068 500683	7.0	POT. NARROW	57.6	39.5 3500 820	0.4 0.2
		4	1	314068 500682	7.0	POT. NARROW VALLISNERIA AMER	22.9 4.2	15.3 3600 300	0.7 0.2
		3	1	314078 500687	6.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	4.2 35.4 0.7	1.2 3800 1500	0.1 0.1
		2	1	314078 500688	6.0	POT. NARROW VALLISNERIA AMER	81.5 3.0	44.1 3500 280	0.2 0.1
		3	1	314080 500685	7.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	TRACE 54.7 0.6	3400 430	0.3 0.1
		4	1	314077 500685	7.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	TRACE 23.2 6.9	4000 320	0.1 0.1
		4	1	314088 500692	7.0	CHARA SPP. POT. NARROW	3.0 16.7	0.8 1000 430	0.0 0.0
		2	1	314090 500695	6.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	1.1 1.7 3.6	0.3 1800 630	0.1 0.1
		3	1	314089 500691	6.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	40.3 25.6 3.9	9.4 4400 360	0.2 0.2
		4	1	314089 500694	6.0	POT. NARROW VALLISNERIA AMER	86.6 4.0	55.7 3500 440	0.1 0.1
		5	1	314076 500695	6.0	POT. NARROW	0.6	0.4 3700 540	0.4 0.2

2	314073	500693	6.0	NITELLA HYALINA POT. NARROW VALLISNERIA AMER	1.2 22.5 2.2	0.3 14.9 1.5	3600 420	0.2 0.2	0.2
3	314073	500693	6.0	NITELLA HYALINA POT. NARROW VALLISNERIA AMER	15.1 1.8 0.4	5.3 1.3 0.3	3900 720	0.1 0.1	0.1
4	314071	500692	7.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	3.5 5.8 3.8	1.3 3.6 2.8	3600 1500	0.7 0.2	0.2
6	314082	500700	6.0	CHARA SPP. VALLISNERIA AMER	108.4 0.4	26.3 0.3	3400 1400	0.0 0.0	0.0
2	314083	500702	5.5	NITELLA HYALINA POT. NARROW VALLISNERIA AMER	96.9 4.1 3.5	23.1 2.6 2.4	3800 1300	0.5 0.2	0.2
3	314084	500702	5.5	NITELLA HYALINA VALLISNERIA AMER	43.2 4.5	12.5 3.2	3800 1400	0.2 0.2	0.2
4	314090	500700	6.5	NITELLA HYALINA POT. NARROW	20.0 45.9	4.6 23.5	3200 610	0.0 0.0	0.0
5	314091	500701	6.0	NITELLA HYALINA POT. NARROW	10.5 24.7	2.0 17.1	3100 570	0.3 0.2	0.2
6	314091	500700	6.0	NITELLA HYALINA POT. NARROW	69.5 14.5	16.6 10.2	3400 520	0.6 0.2	0.2
7	314094	500706	6.0	NITELLA HYALINA POT. NARROW	88.2 8.3	27.7 5.5	2400 920	0.1 0.1	0.1
2	314095	500706	6.0	CHARA SPP.	120.2	33.5	2400	860	0.1
3	314096	500707	6.0	NITELLA HYALINA VALLISNERIA AMER	74.5 TRACE	17.1	2900	670	0.5 0.3
8	314077	500704	5.0	POT. NARROW VALLISNERIA AMER	36.7 3.8	27.2 2.8	2900 1200	0.3 0.2	0.2
2	314078	500704	5.0	NITELLA HYALINA POT. NARROW VALLISNERIA AMER	3.3 27.8 4.5	0.5 19.6 3.4	2800 1300	0.3 0.1	0.1
3	314078	500704	5.0	POT. NARROW VALLISNERIA AMER	24.4 11.9	15.8 7.6	3200 760	0.0 0.0	0.0
4	314079	500704	6.0	POT. CRISPUS POT. NARROW	44.8 31.9	31.4 21.1	3700 940	0.1 0.1	0.1
5	314082	500705	5.0	MYRIO. SPICATUM	164.1	125.6	2800	380	0.5 0.3
6	314080	500707	5.0	MYRIO. SPICATUM	79.6	59.1	3100	640	0.1 0.0
7	314081	500707	5.0	MYRIO. SPICATUM VALLISNERIA AMER	128.8 1.1	96.5 0.7	3500 2300	0.3 0.2	0.2

9	1	314087	500710	5.5	POT. NARROW	41.5	27.4	3500	140	0.1	0.1
	2	314088	500711	5.5	POT. NARROW	37.5	23.2	3800	170	0.0	0.0
	3	314086	500709	6.0	POT. NARROW	33.1	22.1	4300	430	0.1	0.0
	4	314086	500713	6.0	POT. CRISPUS	126.2	99.5	4200	570	0.0	0.0
					POT. NARROW	11.6	8.6				
	5	314088	500715	6.0	MYRIO. SPICATUM	TRACE		3800	190	0.3	0.3
					POT. CRISPUS	130.0	103.4				
					POT. NARROW	10.8	8.2				
	6	314089	500714	6.0	POT. CRISPUS	35.3	27.2	4700	490	0.0	0.0
					POT. NARROW	28.4	19.9				
	10	1	314100	500718	6.0	CHARA SPP.	6.5	2.9	4100	160	0.0
					POT. NARROW	54.1	40.2				
	2	314100	500718	6.0	POT. NARROW	26.5	18.2	4100	510	0.0	0.0
	3	314101	500719	6.0	POT. NARROW	41.5	29.7	3500	1000	0.0	0.0
					VALLISNERIA AMER	TRACE					
	11	1	314088	500715	6.0	POT. NARROW	77.5	53.6	4200	600	0.0
					VALLISNERIA AMER	2.0	1.5				
	2	314088	500715	6.0	POT. NARROW	40.0	25.8	3600	340	0.0	0.0
					VALLISNERIA AMER	9.2	6.5				
	3	314090	500718	6.0	POT. NARROW	36.1	23.5	4100	150	0.0	0.0
					VALLISNERIA AMER	6.2	4.2				
	12	1	314099	500728	7.0	CHARA SPP.	2.8	0.8	3800	1100	0.0
					POT. NARROW	25.0	17.0				
	2	314099	500728	7.0	CHARA SPP.	10.9	3.7	4100	1000	0.0	0.0
					POT. NARROW	35.5	24.1				
					VALLISNERIA AMER	3.2	2.3				
	3	314099	500728	6.5	CHARA SPP.	1.6	0.6	4700	1400	0.0	0.0
					POT. NARROW	40.1	25.1				
					VALLISNERIA AMER	1.1	0.8				
	13	1	314099	500732	12.0	NO PLANTS PRESENT		3800	360	1.4	0.8
	2	314100	500733	12.0	NO PLANTS PRESENT			4200	340	0.5	0.4
	3	314102	500735	10.0	NO PLANTS PRESENT				410	0.6	0.4
	14	1	314109	500739	9.0	POT. NARROW	1.3	0.8	4100	430	0.3
	2	314109	500738	9.0	POT. NARROW	2.4	1.4	4500	860	0.0	0.1
					VALLISNERIA AMER	0.4	0.3				
	3	314110	500740	8.5	POT. NARROW	0.8	0.5	4100	910	0.0	0.0

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
DETROIT	STONY	1	1	314225 500979	7.5	POT. NARROW	12.2	4.9	0.7
						VALLISNERIA AMER	12.2	8.9	
		2	2	314225 500980	8.0	POT. NARROW	5.0	2.3	0.7
						VALLISNERIA AMER	8.2	2.4	
		3	3	314225 500980	7.0	POT. NARROW	4.1	2.6	0.7
						VALLISNERIA AMER	1.7	1.1	
		2	1	314215 500977	7.0	POT. NARROW	7.9	4.4	0.7
						VALLISNERIA AMER	4.5	3.4	
		2	2	314215 500977	7.0	POT. NARROW	3.7	1.8	0.7
						VALLISNERIA AMER	0.2	0.1	
		3	3	314216 500977	7.0	CHARA SPP.	4.0	0.8	0.7
						POT. NARROW	9.0	6.1	
						VALLISNERIA AMER	6.2	4.7	
		3	1	314201 500978	6.5	ELODEA CANADENSIS	1.4	0.7	0.0
						MYRIO. SPICATUM	25.0	16.5	
						POT. NARROW	3.0	2.0	
						VALLISNERIA AMER	17.1	11.5	
		2	2	314200 500976	8.0	ELODEA CANADENSIS	0.3	0.2	0.2
						MYRIO. SPICATUM	TRACE	47.4	
						POT. CRISPUS	82.6		
		3	3	314200 500975	7.5	POT. CRISPUS	46.0	27.7	0.3
		4	4	314206 500978	6.5	POT. CRISPUS	18.6	9.4	0.2
						VALLISNERIA AMER	15.4	10.5	
		5	5	314202 500978	6.5	MYRIO. SPICATUM	3.1	2.2	0.0
						POT. GRAMINEUS	34.0	25.6	
						POT. NARROW	1.7	0.8	
		6	6	314201 500977	6.5	POT. GRAMINEUS	25.2	19.5	0.1
						RANUN. LONGIROST	1.7	1.5	
		7	7	314201 500977	6.5	MYRIO. SPICATUM	11.2	7.4	0.1
						POT. NARROW	3.2	2.1	
						VALLISNERIA AMER	1.2	0.7	
		8	8	314201 500977	6.0	POT. RICHARDSONI	49.6	35.9	0.1
						POT. NARROW	1.0	0.8	
						VALLISNERIA AMER	1.6	0.9	
		9	9	314202 500978	6.0	MYRIO. SPICATUM	27.8	19.8	0.1
						POT. NARROW	0.7	0.5	
						VALLISNERIA AMER	2.8	1.7	

4	1	314194	500974	8.0	POT. RICHARDSONI POT. NARROW	46.3 4.7	32.1 0.2	420	0.4	0.2	

2	314194	500975	8.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	0.2 0.6 34.7 0.2 4.4	0.0 0.3 17.6 0.1 3.1	420	0.4	0.2		

3	314195	500975	8.0	POT. RICHARDSONI	45.6	34.6	4200	420	0.4	0.2	
5	1	314232	500986	9.0	POT. NARROW VALLISNERIA AMER	1.4 31.3	0.3 19.8	3900 760	0.4	0.4	

2	314233	500986	8.0	HETERANTHERA DUB VALLISNERIA AMER	0.7 17.4	0.3 12.5	3900 760	0.4	0.4	0.4	

3	314232	500986	8.0	POT. NARROW VALLISNERIA AMER	0.8 19.3	0.5 14.0	3900 760	0.4	0.4	0.4	

4	314233	500991	4.0	POT. CRISPUS VALLISNERIA AMER	186.2 4.1	133.4 3.4	3900 1100	0.3	0.3	0.2	

5	314233	500991	4.0	POT. CRISPUS	378.9	279.8	3900	1100	0.3	0.2	
6	314233	500991	4.0	MYRIO. SPICATUM POT. CRISPUS	7.3 26.1	5.1 20.6	3900 1100	0.3	0.3	0.2	

6	1	314225	500986	4.0	ELODEA CANADENS HETERANTHERA DUB POT. CRISPUS RANUN. LONGIROST	40.5 3.0 223.7 2.1	-0.1 1.4 157.9 1.7	3000 18	0.1	0.1	

2	314225	500987	3.5	ELODEA CANADENS RANUN. LONGIROST	166.7 402.7	112.0 279.1	3000	18	0.1	0.1	

3	314224	500986	4.0	ELODEA CANADENS HETERANTHERA DUB MYRIO. SPICATUM POT. CRISPUS RANUN. LONGIROST	141.9 16.0 6.0 143.9 3.1	108.0 12.2 4.8 111.5 2.5	3000	18	0.1	0.1	

7	1	314242	500998	3.5	POT. CRISPUS POT. NARROW	256.2 1.7	211.3 1.3	640	25	0.1	0.0

2	314242	500998	4.0	POT. CRISPUS	70.1	57.4	640	25	0.1	0.0	
3	314242	500997	5.0	HETERANTHERA DUB POT. CRISPUS	9.0 112.4	5.4 90.1	640	25	0.1	0.0	

8	1	314232	500994	3.5	POT. CRISPUS	394.2	232.8	2500	11	0.1	0.0
2	314232	500995	4.0	POT. CRISPUS	282.6	213.6	2500	11	0.1	0.0	
3	314232	500995	4.0	ELODEA CANADENS HETERANTHERA DUB POT. CRISPUS	0.6 0.8 174.2	0.5 0.6 127.5	2500	11	0.1	0.0	

9	1	314257	501003	7.0	NO PLANTS PRESENT			3500	1000	1.6	1.6
2	314262	501002	10.0	NO PLANTS PRESENT			2900	630	2.4	2.4	

3	314262	501002	10.0	NO PLANTS PRESENT	2900	630	2.4	2.4
10	1	314254	501003	5.0 HETERANTHERA DUB	61.3	44.9	4100	1.4
				POT. CRISPUS	24.4	13.9		1.2
2	314255	501005	6.5	POT. CRISPUS	3.9	2.8	4100	1.2
				POT. NARROW	3.7	2.6		
3	314254	501003	6.5	POT. CRISPUS	9.4	7.8	3900	1.4
11	1	314267	501013	6.5	NO PLANTS PRESENT		3000	1.9
2	314267	501013	6.5	NO PLANTS PRESENT			3000	1.9
3	314267	501013	6.0	NO PLANTS PRESENT			3000	1.9

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LOTRAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	SURFACE BOTTOM	CURRENT (FT./SEC.)	
ST. CLAIR STAG	1		1	-	-	NO PLANTS PRESENT	-	-	-	-	-	
				-	-	NO PLANTS PRESENT	-	-	-	-	-	
				-	-	NO PLANTS PRESENT	-	-	-	-	-	
				2	-	-	NO PLANTS PRESENT	-	-	-	-	-
					-	-	NO PLANTS PRESENT	-	-	-	-	-
					-	-	NO PLANTS PRESENT	-	-	-	-	-
				3	-	-	NO PLANTS PRESENT	-	-	-	-	-
					-	-	NO PLANTS PRESENT	-	-	-	-	-
					-	-	NO PLANTS PRESENT	-	-	-	-	-
				4	-	-	NO PLANTS PRESENT	-	-	-	-	-
					-	-	NO PLANTS PRESENT	-	-	-	-	-
					-	-	NO PLANTS PRESENT	-	-	-	-	-
	5		1	309035 497396	6.0	POT. GRAMINEUS	32.9	25.1	500	350	1.0	0.6
				309035 497396	6.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	12.0 56.2 14.2	4.1 43.4 11.3	500 350	350	1.0 1.0	0.6 0.6
				309035 497396	5.5	CHARA SPP. POT. GRAMINEUS POT. NARROW	0.4 33.7 103.7	0.1 27.1 86.1	500	350	1.0	0.6
				309035 497396	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	7.1 2.6 5.0	2.5 0.8 4.2	600	500	1.7	1.3
				309035 497396	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	50.2 13.1 4.4	19.9 9.7 3.4	600	500	1.7	1.3
				309035 497396	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	42.3 10.1	16.3 8.8	600	500	1.7	1.3
				309040 497402	3.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI POT. NARROW	5.4 14.1 31.4 22.2	2.2 10.6 25.7 17.3	1000	120	-	-
				309040 497402	7.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	1.8 0.6 12.6 51.1 2.6	0.6 0.4 10.3 42.1 2.0	1000	120	-	-
				309040 497402	9.0	ELODEA CANADENS POT. RICHARDSONI	93.3 12.0	68.0 9.7	1000	120	-	-
				309045 497403	6.5	CHARA SPP.	394.8	121.3	1300	270	1.6	0.6

				POT. GRAMINEUS	6.5	5.0	
				POT. NARROW	20.7	16.3	
5	309045	497403	6.5	CHARA SPP.	173.1	59.7	1300 270 1.6 0.6
				POT. GRAMINEUS	34.4	25.4	
				POT. NARROW	6.5	5.3	
6	309045	497403	6.5	CHARA SPP.	TRACE		
				POT. NARROW	28.9	22.7	1300 270 1.6 0.6
7	309037	497398	6.0	CHARA SPP.	131.0	42.0	420 280 -
				POT. GRAMINEUS	67.3	46.0	
2	309037	497398	6.0	CHARA SPP.	321.3	99.2	420 280 -
				POT. GRAMINEUS	11.5	8.2	
				POT. NARROW	10.7	8.8	
3	309037	497398	6.0	CHARA SPP.	279.8	97.1	420 280 -
				POT. GRAMINEUS	32.3	25.0	
				POT. NARROW	5.1	4.0	
4	309037	497398	6.0	CHARA SPP.	0.8	0.3	670 320 -
				ELODEA CANADENS	0.9	0.6	
				POT. GRAMINEUS	33.4	26.4	
				POT. RICHARDSONI	2.5	2.0	
				POT. NARROW	62.9	50.2	
5	309037	497398	7.0	ELODEA CANADENS	4.6	3.5	670 320 -
				NITELLA HYALINA	19.7	7.2	
				POT. GRAMINEUS	96.5	73.4	
				POT. NARROW	110.3	89.9	
6	309037	497398	6.5	CHARA SPP.	2.8	1.0	670 320 -
				POT. GRAMINEUS	48.3	35.6	
				POT. NARROW	78.5	63.9	
8	309042	497404	9.0	CHARA SPP.	0.7	0.3	1000 800 0.6 0.3
				ELODEA CANADENS	63.8	47.3	
				MYRIO. SPICATUM	7.1	5.9	
				POT. RICHARDSONI	45.2	35.9	
2	309042	497404	9.0	CHARA SPP.	1.0	0.5	1000 800 0.6 0.3
				ELODEA CANADENS	21.2	15.9	
				MYRIO. SPICATUM	83.3	66.1	
				POT. RICHARDSONI	71.8	58.9	
3	309042	497404	9.0	ELODEA CANADENS	56.5	40.2	1000 800 0.6 0.3
				MYRIO. SPICATUM	3.3	2.6	
				POT. RICHARDSONI	47.2	38.5	
9	309038	497407	11.0	ELODEA CANADENS	18.5	13.4	360 150 0.0 0.0
				POT. CRISPUS	45.1	35.3	
				POT. RICHARDSONI	39.8	30.9	
				VALLISNERIA AMER	0.9	0.6	
2	309038	497407	11.0	ELODEA CANADENS	28.6	21.8	360 150 0.0 0.0
				POT. CRISPUS	78.7	72.4	
				POT. ZOSTERIFORM	1.8	1.3	
3	309038	497407	11.1	ELODEA CANADENS	12.6	9.7	360 150 0.0 0.0

		POT. RICHARDSONI	7.7	6.1					
		POT. NARROW	110.1	89.0					
6	309046	497412 9.5	ELODEA CANADENS	19.2	15.0	450	220	0.1	0.0
		POT. RICHARDSONI	5.3	4.0					
		POT. NARROW	11.1	8.1					
7	309045	497412 4.0	ELODEA CANADENS	27.1	20.8	560	150	0.6	0.4
		POT. CRISPUS	12.9	11.3					
		POT. RICHARDSONI	30.4	24.1					
		POT. ZOSTERIFORM	3.3	2.9					
8	309045	497412 5.0	CHARA SPP.	TRACE		560	150	0.6	0.4
		ELODEA CANADENS	28.0	15.1					
		POT. CRISPUS	28.6	24.6					
		POT. ZOSTERIFORM	19.4	15.4					
9	309045	497412 9.0	ELODEA CANADENS	33.2	22.0	560	150	0.6	0.4
		POT. CRISPUS	3.5	2.9					
		POT. RICHARDSONI	4.4	3.5					
		POT. ZOSTERIFORM	12.2	8.3					
1	309067	497421 6.0	CHARA SPP.	265.2	60.7	600	510	1.5	1.5
2	309067	497421 6.0	CHARA SPP.	35.4	10.5	600	510	1.5	1.5
3	309067	497421 6.0	CHARA SPP.	206.2	42.0	600	510	1.5	1.5
4	309066	497420 7.0	CHARA SPP.	71.6	20.5	1300	490	0.7	0.5
		POT. NARROW	0.5	0.4					
5	309066	497420 7.0	CHARA SPP.	177.9	29.9	1300	490	0.7	0.5
6	309066	497420 7.0	CHARA SPP.	31.9	8.9	1300	490	0.7	0.5
1	309074	497427 6.0	CHARA SPP.	19.2	4.9	350	200	1.3	1.1
		POT. RICHARDSONI	0.2	0.2					
2	309074	497427 5.5	CHARA SPP.	91.7	27.1	350	200	1.3	1.1
		POT. GRAMINEUS	4.8	3.7					
3	309074	497427 6.0	CHARA SPP.	23.2	7.4	350	200	1.3	1.1
		POT. GRAMINEUS	0.2	0.2					
1	309075	497428 3.0	CHARA SPP.	214.2	65.1	1000	450	1.5	0.8
		POT. NARROW	0.6	0.5					
2	309075	497428 3.0	CHARA SPP.	94.8	32.4	1000	450	1.5	0.8
3	309075	497428 3.0	CHARA SPP.	142.1	50.5	1000	450	1.5	0.8
		POT. GRAMINEUS	8.9	6.0					
4	309081	497436 3.0	CHARA SPP.	85.4	34.6	1100	1000	0.4	0.3
		POT. GRAMINEUS	66.4	45.2					
		POT. NARROW	13.6	11.8					
		SAGITTARIA SPP.	1.5	1.0					
5	309081	497436 3.0	CHARA SPP.	125.0	41.8	1100	1000	0.4	0.3
		POT. GRAMINEUS	62.4	36.4					
		POT. NARROW	TRACE						

6	309081 497436	3.0	CHARA SPP.	37.2	13.4	1100	1000	0.4	0.3
			POT. GRAMINEUS	40.7	23.6				
			POT. NARROW	1.8	1.4				
7	309078 497434	4.0	CHARA SPP.	154.7	57.0	1300	1000	0.4	0.4
			POT. GRAMINEUS	6.5	4.7				
8	309078 497434	4.0	CHARA SPP.	95.2	29.4	1300	1000	0.4	0.4
			POT. NARROW	12.5	8.5				
9	309078 497434	4.0	CHARA SPP.	11.2	3.9	1300	1000	0.4	0.4
			POT. GRAMINEUS	136.0	81.3				

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE BOTTOM	SURFACE BOTTOM
ST. CLAIR FAWN		1	1	309576 498253	9.0	CHARA SPP.	1.5	0.4 4100	0.8 0.2
						ELODEA CANADENSIS	0.7	0.4	
						POT. NARROW	170.5	141.3	
		2	309576 498253	10.5	POT. ZOSTERIFORM	1.8	1.2 4100	660	0.8 0.2
						POT. NARROW	57.5	44.5	
		3	309576 498253	9.0	POT. NARROW	167.6	132.3 4100	660	0.8 0.2
		4	309568 498252	9.0	CHARA SPP.	4.2	1.3 3400	1500	1.1 0.2
						POT. GRAMINEUS	52.2	40.1	
						POT. RICHARDSONI	44.2	27.7	
						POT. NARROW	9.4	7.5	
		5	309568 498252	10.0	ELODEA CANADENSIS	0.6	0.4 3400	1500	1.1 0.2
						POT. GRAMINEUS	0.9	0.7	
						POT. RICHARDSONI	89.6	70.8	
						POT. NARROW	11.5	9.1	
		6	309568 498252	10.0	CHARA SPP.	24.7	8.0 3400	1500	1.1 0.2
						POT. GRAMINEUS	6.0	4.8	
						POT. RICHARDSONI	71.9	57.9	
						POT. NARROW	7.1	5.6	
		1	309578 498255	9.0	POT. RICHARDSONI	178.2	143.7 3900	120	0.5 0.2
						POT. NARROW	9.9	7.7	
		2	309578 498255	8.1	CHARA SPP.	4.0	1.8 3900	120	0.5 0.2
						POT. GRAMINEUS	48.1	33.4	
						POT. RICHARDSONI	105.8	80.2	
		3	309578 498255	8.5	CHARA SPP.	0.8	0.2 3900	120	0.5 0.2
						POT. GRAMINEUS	6.1	4.7	
						POT. RICHARDSONI	28.8	21.2	
						POT. NARROW	11.9	8.8	
		4	309570 498254	6.0	CHARA SPP.	39.6	15.8 3200	1000	1.2 0.0
						POT. GRAMINEUS	26.0	19.8	
						POT. RICHARDSONI	26.3	13.4	
						POT. NARROW	30.1	24.5	
		5	309570 498254	6.1	POT. GRAMINEUS	35.8	28.5 3200	1000	1.2 0.0
						POT. RICHARDSONI	82.2	65.1	
						POT. NARROW	49.4	39.6	
		6	309570 498254	6.2	CHARA SPP.	13.9	4.9 3200	1000	1.2 0.0
						POT. GRAMINEUS	62.7	48.5	
						POT. NARROW	33.6	27.3	
		3	309586 498259	11.5	ELODEA CANADENSIS	10.4	7.9 3700	1000	0.4 0.2
						MYRIO. SPICATUM	5.2	4.2	
						POT. RICHARDSONI	95.1	79.3	

3	309584	498270	2.5	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI	186.2 12.4 1.3	55.4 9.0 1.0	2200	2500	0.3	0.1	
8	1	309608	498273	10.0	CHARA SPP. POT. RICHARDSONI	10.4 36.0	6.1 28.6	1300	0.1	0.1	
2	309608	498273	6.5	CHARA SPP. POT. RICHARDSONI POT. NARROW	2.2 64.8 5.2	0.9 50.2 3.7	2600	1300	0.1	0.1	
3	309608	498273	7.0	POT. RICHARDSONI POT. NARROW	25.4 16.9	20.3 12.5	2600	1300	0.1	0.1	
9	1	309603	498277	2.5	CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER	164.4 32.1 0.2	47.9 20.9 0.1	2300	2100	0.9	0.9
2	309603	498277	2.5	CHARA SPP. POT. RICHARDSONI POT. NARROW	179.1 4.2 0.5	37.9 2.8 0.4	2300	2100	0.9	0.9	
3	309603	498277	2.5	CHARA SPP. POT. RICHARDSONI	65.9 98.0	20.2 74.6	2300	2100	0.9	0.9	
4	309599	498274	3.0	CHARA SPP.	149.8	49.2	3800	3000	0.6	0.4	
5	309599	498274	2.5	CHARA SPP.	72.5	23.6	3800	3000	0.6	0.4	
6	309599	498274	3.1	CHARA SPP. POT. RICHARDSONI	139.3 0.7	37.8 0.5	3800	3000	0.6	0.4	
10	1	309620	498284	7.0	CHARA SPP. POT. CRISPIUS POT. GRAMINEUS POT. NARROW VALLISNERIA AMER	85.1 0.4 19.1 0.7 1.3	29.4 0.3 13.1 0.5 0.8	2200	1500	0.4	0.2
2	309620	498284	8.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	80.1 5.5 0.8	24.6 3.9 0.4	2200	1500	0.4	0.2	
3	309620	498284	5.0	CHARA SPP. POT. GRAMINEUS	158.5 2.4	50.0 1.6	2200	1500	0.4	0.2	
11	1	309619	498285	3.5	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI	15.7 59.0 72.2	4.7 43.7 57.9	310	230	0.4	0.0
2	309619	498285	3.2	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI POT. NARROW SAGITTARIA SPP.	3.2 56.5 62.6 1.3 31.0	1.0 35.6 49.1 0.9 2.3	310	230	0.4	0.0	
3	309619	498285	3.5	POT. GRAMINEUS POT. RICHARDSONI POT. NARROW	124.8 100.1 1.2	83.1 79.7 0.7	310	230	0.4	0.0	

4	309612	498281	3.0	CHARA SPP.	381.1	101.2	1500	1000	0.4	0.3
				POT. RICHARDSONI	1.0	0.7				
5	309612	498281	3.0	CHARA SPP.	99.8	34.0	1500	1000	0.4	0.3
6	309612	498281	3.0	CHARA SPP.	432.6	194.4	1500	1000	0.4	0.3

SUBMERSED MACROPHYTE PONAR DATA. JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
ST. CLAIR	RUSSELL	1	1	309943	498653	9.0	CHARA SPP.	14.6	5.3	4300	2500
							POT. GRAMINEUS	34.6	26.1		
							POT. NARROW	4.5	3.5		
		2	309943	498653	9.0	CHARA SPP.	29.2	5.4	4300	2500	
							POT. GRAMINEUS	18.3	14.4		
							POT. NARROW	9.0	7.2		
		3	309943	498653	9.0	CHARA SPP.	44.8	14.3	4300	2500	
							HETERANTHERA DUB	1.5	1.0		
							POT. GRAMINEUS	42.8	32.7		
							POT. NARROW	21.8	18.0		
		2	1	309975	498660	15.0	NO PLANTS PRESENT				
		2	309975	498660	15.0	NO PLANTS PRESENT					
		3	309975	498660	15.0	NO PLANTS PRESENT					
		3	1	309975	498659	15.0	NO PLANTS PRESENT				
		2	309975	498659	15.0	NO PLANTS PRESENT					
		3	309975	498659	15.0	NO PLANTS PRESENT					
		4	1	309956	498659	6.0	CHARA SPP.	0.7	0.2	3000	1100
							ELODEA CANADENS	1.0	0.7		0.0
							POT. RICHARDSONI	52.9	37.4		
							POT. NARROW	2.1	1.6		
		2	309956	498659	6.0	CHARA SPP.	0.3	0.0	3000	1100	0.0
							ELODEA CANADENS	15.1	10.0		
							POT. RICHARDSONI	27.2	21.1		
							POT. NARROW	34.1	27.8		
		3	309956	498659	7.0	CHARA SPP.	1.6	0.5	3000	1100	0.0
							ELODEA CANADENS	89.9	84.7		
							POT. RICHARDSONI	82.6	64.1		
							POT. NARROW	48.1	38.9		
		4	309966	498661	10.0	ELODEA CANADENS	112.3	69.1	3800	1100	0.0
							MYRIO. SPICATUM	1.3	0.9		
							POT. RICHARDSONI	53.5	39.7		
		5	309966	498661	11.0	ELODEA CANADENS	151.8	100.2	3800	1100	0.0
							POT. GRAMINEUS	1.3	1.0		
		6	309966	498661	12.0	ELODEA CANADENS	192.6	130.7	3800	1100	0.0
		1	309950	498657	7.0	POT. RICHARDSONI	41.8	30.8	3100	1100	0.0
							POT. NARROW	22.2	17.8		
		2	309950	498657	7.0	POT. RICHARDSONI	55.9	44.0	3100	1100	0.0
							POT. NARROW	29.6	24.1		
		3	309950	498657	7.0	CHARA SPP.	0.8	0.2	3100	1100	0.0

4	309950	498660	5.0	CHARA SPP.	224.8	70.7	3400	2400	1.1	0.9	
5	309950	498660	6.0	CHARA SPP.	116.0	43.4	3400	2400	1.1	0.9	
6	309950	498660	5.5	CHARA SPP.	167.1	60.0	3400	2400	1.1	0.9	
				POT. GRAMINEUS	4.3	3.3					
6	1	309945	498659	8.0	CHARA SPP.	95.9	30.4	4200	2400	0.4	0.0
				POT. GRAMINEUS	27.0	18.8					
				POT. NARROW	13.4	10.9					
2	309945	498659	8.0	CHARA SPP.	58.6	18.9	4200	2400	0.4	0.0	
				POT. GRAMINEUS	12.8	8.5					
				POT. NARROW	13.2	10.1					
3	309945	498659	8.0	CHARA SPP.	48.8	14.2	4200	2400	0.4	0.0	
				POT. GRAMINEUS	4.9	3.8					
				POT. NARROW	0.8	0.6					
7	1	309976	498664	8.0	ELDEA CANADENS	15.4	10.4	1800	410	0.7	0.0
				POT. RICHARDSONI	1.4	1.2					
				POT. NARROW	33.3	26.5					
2	309976	498664	7.0	CHARA SPP.	75.9	36.2	1800	410	0.7	0.0	
				ELDEA CANADENS	12.2	8.8					
				POT. RICHARDSONI	7.6	6.2					
				POT. NARROW	25.8	20.0					
3	309976	498664	9.0	CHARA SPP.	16.2	7.1	1800	410	0.7	0.0	
				ELDEA CANADENS	54.3	38.6					
				POT. GRAMINEUS	5.5	4.6					
				POT. RICHARDSONI	3.4	2.5					
				POT. NARROW	19.5	16.1					
4	309978	498666	3.5	CHARA SPP.	62.4	21.3	3700	3000	0.8	0.7	
5	309978	498666	3.0	CHARA SPP.	123.4	36.2	3700	3000	0.8	0.7	
6	309978	498666	3.5	CHARA SPP.	42.0	17.5	3700	3000	0.8	0.7	
8	1	309969	498665	5.0	CHARA SPP.	1.3	0.5	2000	230	0.6	0.0
				ELDEA CANADENS	13.0	9.2					
				POT. GRAMINEUS	8.7	6.1					
				POT. RICHARDSONI	22.4	16.7					
				POT. NARROW	48.7	38.7					
2	309969	498665	4.0	ELDEA CANADENS	38.0	25.2	2000	230	0.6	0.0	
				POT. GRAMINEUS	56.6	40.7					
				POT. RICHARDSONI	3.3	2.6					
				POT. NARROW	17.0	14.2					
3	309969	498665	5.0	CHARA SPP.	2.2	0.8	2000	230	0.6	0.0	
				ELDEA CANADENS	8.9	6.6					
				POT. GRAMINEUS	76.0	57.6					
				POT. RICHARDSONI	8.1	6.5					
				POT. NARROW	119.0	90.9					

4	309967	498664	4.0	CHARA SPP. POT. GRAMINEUS	228.7 1.7	69.9 1.0	3200	2800	0.0	0.0
5	309967	498664	4.0	CHARA SPP.	516.2	139.5	3200	2800	0.0	0.0
6	309967	498664	4.0	CHARA SPP.	573.0	137.5	3200	2800	0.0	0.0
9	1	309955	498665	3.5	POT. GRAMINEUS POT. NARROW	42.2 40.4	31.3 31.9	2500 250	0.4	0.1
2	309955	498665	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	59.7 64.4 119.1	17.7 40.6 80.4	2500	250	0.4	0.1
3	309955	498665	3.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	60.4 47.0 60.2	20.8 35.3 50.0	2500	250	0.4	0.1
4	309954	498663	4.0	CHARA SPP. POT. GRAMINEUS	120.8 5.9	36.8 4.2	3400	3200	1.0	0.8
5	309954	498663	4.0	CHARA SPP. POT. GRAMINEUS	195.5 1.2	55.1 0.6	3400	3200	1.0	0.8
6	309954	498663	4.0	CHARA SPP. POT. GRAMINEUS	214.3 1.3	67.7 0.9	3400	3200	1.0	0.8

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
								WEIGHT (G/M2)	SURFACE	BOTTOM
DETROIT	BELLE	1	1	312758	499951	9.0	POT. RICHARDSONI	117.6	91.1	220
							POT. ZOSTERIFORM	TRACE		
		2	2	312758	499951	9.0	POT. RICHARDSONI	173.2	135.0	220
		3	3	312758	499951	9.0	POT. RICHARDSONI	52.7	39.9	220
		4	4	312760	499953	7.5	CHARA SPP.	21.3	7.5	3800
							NAJAS FLEXILIS	3.2	2.0	
							POT. RICHARDSONI	0.6	0.3	
							VALLISNERIA AMER	11.0	7.7	
		5	5	312760	499953	7.5	CHARA SPP.	49.9	13.0	3800
							NAJAS FLEXILIS	0.6	0.3	
							VALLISNERIA AMER	20.9	14.8	
		6	6	312760	499953	8.0	NAJAS FLEXILIS	2.4	1.4	3800
							POT. ZOSTERIFORM	43.7	30.0	
							VALLISNERIA AMER	45.2	9.7	
							NITELLOP. OBTUSA			
		2	1	312765	499959	11.0	NO PLANTS PRESENT			4000
		2	2	312765	499959	11.0	NO PLANTS PRESENT			4000
		3	3	312765	499959	11.0	NO PLANTS PRESENT			4000
		3	1	312778	499966	8.5	POT. RICHARDSONI	140.0	104.0	4500
							VALLISNERIA AMER	4.6	2.7	
		2	2	312778	499966	8.5	POT. RICHARDSONI	52.0	37.6	4500
							VALLISNERIA AMER	3.5	2.1	
							NITELLOP. OBTUSA	0.7	0.4	
		3	3	312778	499966	8.5	POT. RICHARDSONI	88.4	63.8	4500
							VALLISNERIA AMER	2.9	2.2	
		4	1	312788	499972	11.0	POT. ZOSTERIFORM	1.6	0.7	4500
							VALLISNERIA AMER	16.9	10.0	
		2	2	312788	499972	9.0	VALLISNERIA AMER	40.7	28.6	4500
							NITELLOP. OBTUSA	0.5	0.1	
		3	3	312788	499972	9.0	VALLISNERIA AMER	27.8	19.2	4500
		5	1	312803	499981	5.5	CHARA SPP.	16.4	5.4	3700
							POT. RICHARDSONI	44.4	33.0	
							POT. NARROW	9.3	6.9	
							VALLISNERIA AMER	25.7	18.5	
		2	2	312803	499981	7.0	POT. RICHARDSONI	18.4	14.4	3700
							POT. ZOSTERIFORM	4.6	3.4	
							VALLISNERIA AMER	74.9	49.8	

3	312803	499981	7.0	POT. CRISPUS	0.6	0.4	3700	1100	0.7	0.1
				POT. RICHARDSONI	56.0	46.3				
				VALLISNERIA AMER	34.2	25.1				
6	1	312809	499986	11.0	VALLISNERIA AMER	31.0	18.5	4000	650	1.7
				NITELLOP. OBTUSA	0.3	0.1				1.6
2	312809	499986	11.0	NAJAS FLEXILIS	TRACE		4000	650	1.7	1.6
				VALLISNERIA AMER	43.4	27.9				
				NITELLOP. OBTUSA	TRACE					
3	312809	499986	11.0	VALLISNERIA AMER	65.9	42.0	4000	650	1.7	1.6
7	1	312854	499997	7.0	VALLISNERIA AMER	8.8	6.0	1700	1200	0.1
				NITELLOP. OBTUSA	249.5	150.6				0.0
2	312854	499997	7.0	MYRIO. SPICATUM	1.5	0.7	1700	1200	0.1	0.0
				POT. ZOSTERIFORM	TRACE					
				VALLISNERIA AMER	14.7	10.1				
				NITELLOP. OBTUSA	121.0	41.3				
3	312854	499997	7.0	MYRIO. SPICATUM	3.4	2.0	1700	1200	0.1	0.0
				NAJAS FLEXILIS	0.7	0.4				
				VALLISNERIA AMER	28.2	18.3				
				NITELLOP. OBTUSA	71.2	26.4				
4	312861	499999	6.0	MYRIO. SPICATUM	63.2	46.6	4400	550	0.3	0.1
				NAJAS FLEXILIS	TRACE					
				POT. CRISPUS	27.7	21.0				
				VALLISNERIA AMER	TRACE					
				NITELLOP. OBTUSA	49.8	20.5				
5	312861	499999	6.0	MYRIO. SPICATUM	126.4	97.9	4400	550	0.3	0.1
				POT. CRISPUS	0.6	0.3				
				VALLISNERIA AMER	10.5	6.2				
6	312861	499999	7.0	ELODEA CANADENS	0.5	0.4	4400	550	0.3	0.1
				MYRIO. SPICATUM	4.5	3.5				
				POT. CRISPUS	18.5	14.1				
				POT. ZOSTERIFORM	9.1	5.9				
				VALLISNERIA AMER	14.1	8.7				
				NITELLOP. OBTUSA	15.1	7.2				
8	1	312843	499995	5.0	ELODEA CANADENS	TRACE	3400	450	0.2	0.1
				MYRIO. SPICATUM	TRACE					
				NITELLOP. OBTUSA	161.8	56.0				
2	312843	499995	5.0	MYRIO. SPICATUM	4.9	3.4	3400	450	0.2	0.1
				NITELLOP. OBTUSA	184.9	67.2				
3	312843	499995	5.0	MYRIO. SPICATUM	25.6	16.3	3400	450	0.2	0.1
				VALLISNERIA AMER	7.0	4.9				
				NITELLOP. OBTUSA	166.1	62.5				
4	312843	499995	6.0	MYRIO. SPICATUM	202.1	136.8	3500	1500	0.5	0.3
5	312843	499995	6.0	MYRIO. SPICATUM	115.0	79.6	3500	1500	0.5	0.3
				VALLISNERIA AMER	4.0	2.8				
				NITELLOP. OBTUSA	35.2	13.2				

6	312843	499995	6.0	MYRIO. SPICATUM NITELLOP. OBTUSA	129.1 65.6	93.7 22.5	1500	0.5	0.3	
9	1	312835	499993	6.0	CHARA SPP. MYRIO. SPICATUM NITELLOP. OBTUSA	102.8 1.9 0.6	38.6 1.6 0.2	1100	0.3 0.2	
2	312835	499993	6.0	NITELLOP. OBTUSA	87.5	33.6	3500	1100	0.3 0.2	
3	312835	499993	6.0	VALLISNERIA AMER NITELLOP. OBTUSA	92.6 110.9	55.2 37.6	3500	1100	0.3 0.2	
4	312834	499995	9.0	MYRIO. SPICATUM POT. RICHARDSONI VALLISNERIA AMER	202.3 23.9 8.9	157.1 17.0 6.2	3100	600	0.3 0.0	
5	312834	499995	9.0	MYRIO. SPICATUM VALLISNERIA AMER	121.8 9.4	95.0 6.7	3100	600	0.3 0.0	
6	312834	499995	9.0	MYRIO. SPICATUM POT. RICHARDSONI POT. ZOSTERIFORM POT. NARROW VALLISNERIA AMER NITELLOP. OBTUSA	122.5 11.1 2.1 1.4 16.7 13.1	88.6 9.3 1.6 1.0 11.6 4.1	3100	600	0.3 0.0	
10	1	312825	499994	7.0	POT. RICHARDSONI NITELLOP. OBTUSA	74.4 45.3	59.9 16.1	3700	350	0.8 0.2
2	312825	499994	7.0	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER NITELLOP. OBTUSA	177.7 TRACE 11.7 3.1	132.1 7.7 0.9	3700	350	0.8 0.2	
3	312825	499994	7.0	NITELLA HYALINA POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER	4.4 48.6 0.7 38.1	1.3 37.1 0.4 18.3	3700	350	0.8 0.2	

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
DETROIT	HENNEPIN	1	1	314061	500667	8.0	POT. NARROW	28.6	20.6	4000	1000	0.2	0.0
		2	2	314061	500667	8.0	POT. NARROW	50.1	32.5	4000	1000	0.2	0.0
							VALLISNERIA AMER	9.0	4.1				
		3	3	314061	500667	8.0	POT. NARROW	54.4	36.9	4000	1000	0.2	0.0
							VALLISNERIA AMER	3.7	2.7				
		4	4	314067	500670	6.0	POT. NARROW	15.6	10.7	3900	2500	0.2	0.0
							VALLISNERIA AMER	50.8	22.4				
		5	5	314067	500670	6.0	POT. NARROW	10.2	4.5	3900	2500	0.2	0.0
							VALLISNERIA AMER	14.7	8.3				
		6	6	314067	500670	6.0	VALLISNERIA AMER	37.6	19.1	3900	2500	0.2	0.0
		2	1	314061	500675	9.0	POT. RICHARDSONI	101.3	73.4	3600	330	0.6	0.1
			2	314061	500675	9.0	POT. RICHARDSONI	212.2	147.0	3600	330	0.6	0.1
			3	314061	500675	9.0	POT. RICHARDSONI	72.0	55.1	3600	330	0.6	0.1
		4	4	314063	500676	8.0	MYRIO. SPICATUM	2.9	2.2	3600	130	0.3	0.1
							POT. NARROW	77.6	57.2				
		5	5	314063	500676	8.0	POT. NARROW	90.2	61.7	3600	130	0.3	0.1
							VALLISNERIA AMER	48.6	24.1				
		6	6	314063	500676	8.0	POT. NARROW	65.9	51.0	3600	130	0.3	0.1
		3	1	314073	500683	5.0	VALLISNERIA AMER	64.7	34.3	4100	2500	0.2	0.0
			2	314073	500683	5.0	VALLISNERIA AMER	24.8	14.9	4100	2500	0.2	0.0
			3	314073	500683	5.0	VALLISNERIA AMER	126.1	94.4	4100	2500	0.2	0.0
		4	1	314088	500691	6.0	VALLISNERIA AMER	74.9	40.7	3600	270	0.4	0.3
			2	314088	500691	6.0	VALLISNERIA AMER	44.5	26.3	3600	270	0.4	0.3
			3	314088	500691	6.0	VALLISNERIA AMER	9.3	3.8	3600	270	0.4	0.3
		5	1	314067	500687	8.0	POT. RICHARDSONI	133.8	93.4	3300	300	0.1	0.0
							POT. NARROW	4.9	3.5				
		2	2	314067	500687	8.0	POT. RICHARDSONI	165.7	114.1	3300	300	0.1	0.0
							POT. NARROW	1.0	0.6				
		3	3	314067	500687	8.0	POT. RICHARDSONI	143.6	101.7	3300	300	0.1	0.0
							POT. NARROW	13.0	8.9				
		6	1	314083	500696	5.0	POT. RICHARDSONI	66.2	36.8	2100	400	0.3	0.0

2	314083	500696	5.0	POT. RICHARDSONI	223.6	169.0	2100	400	0.3	0.0	
3	314083	500696	5.0	POT. RICHARDSONI	101.5	58.8	2100	400	0.3	0.0	
7	1	314094	500703	6.0	VALLISNERIA AMER	32.7	20.9	2700	90	0.4	0.0
2	314094	500703	6.0	VALLISNERIA AMER	28.2	17.5	2700	90	0.4	0.0	
3	314094	500703	6.0	VALLISNERIA AMER	44.9	25.2	2700	90	0.4	0.0	
8	1	314076	500704	5.0	MYRIO. SPICATUM	12.1	9.6	3500	540	0.4	0.3
				POT. RICHARDSONI	219.1	165.9					
				POT. NARROW	31.0	25.8					
				VALLISNERIA AMER	11.4	5.0					
2	314076	500704	5.0	POT. RICHARDSONI	76.5	54.8	3500	540	0.4	0.3	
				POT. NARROW	31.6	25.0					
				VALLISNERIA AMER	7.4	3.8					
3	314076	500704	5.0	POT. RICHARDSONI	52.9	36.1	3500	540	0.4	0.3	
				POT. NARROW	58.3	46.9					
				VALLISNERIA AMER	0.8	0.6					
4	314076	500703	5.0	POT. RICHARDSONI	30.0	24.2	3500	540	0.4	0.3	
				POT. NARROW	12.4	9.1					
				VALLISNERIA AMER	257.8	230.4					
5	314076	500703	5.0	POT. RICHARDSONI	74.2	53.7	3500	540	0.4	0.3	
				POT. NARROW	22.8	18.0					
				VALLISNERIA AMER	25.5	14.9					
6	314076	500703	5.0	POT. RICHARDSONI	31.1	19.1	3500	540	0.4	0.3	
				POT. NARROW	19.0	14.5					
				VALLISNERIA AMER	338.0	317.0					
7	314075	500702	6.0	MYRIO. SPICATUM	265.6	204.6	4000	350	0.2	0.1	
				NAJAS FLEXILIS	0.6	0.2					
				POT. RICHARDSONI	59.3	44.4					
				POT. NARROW	1.3	0.8					
				VALLISNERIA AMER	3.0	1.8					
8	314075	500702	6.0	MYRIO. SPICATUM	252.6	183.7	4000	350	0.2	0.1	
				POT. RICHARDSONI	3.5	3.1					
				VALLISNERIA AMER	3.0	2.3					
9	314075	500702	6.0	MYRIO. SPICATUM	555.4	502.6	4000	350	0.2	0.1	
				POT. RICHARDSONI	3.4	1.9					
9	1	314088	500708	5.0	POT. RICHARDSONI	35.1	29.0	3800	150	0.3	0.1
				VALLISNERIA AMER	18.9	10.6					
2	314088	500708	5.0	MYRIO. SPICATUM	1.5	0.9	3900	150	0.3	0.1	
				POT. RICHARDSONI	176.8	155.8					
				VALLISNERIA AMER	32.7	19.0					
3	314088	500708	5.0	POT. RICHARDSONI	12.1	6.3	3800	150	0.3	0.1	
				VALLISNERIA AMER	111.9	54.7					
4	314088	500708	5.0	CHARA SPP.	3.2	1.1	3800	150	0.3	0.1	

		MYRIO. SPICATUM	37.4	30.0
		POT. RICHARDSONI	21.0	16.7
		POT. NARROW	3.6	2.5
		VALLISNERIA AMER	5.3	3.5
5	314088 500708 5.0	CHARA SPP.	2.1	0.6 3900 150 0.3 0.1
		POT. RICHARDSONI	71.2	48.7
		POT. NARROW	1.3	0.9
		VALLISNERIA AMER	0.7	0.3
6	314088 500708 5.0	CHARA SPP.	4.0	2.5 3900 150 0.3 0.1
		POT. RICHARDSONI	74.9	48.4
		VALLISNERIA AMER	22.2	13.5
10	1 314100 500716 6.0	VALLISNERIA AMER	86.8	59.3 2700 1100 0.1 0.0
	2 314100 500716 6.0	VALLISNERIA AMER	42.2	24.8 2700 1100 0.1 0.0
		NITELLOP. OBUSA	1.0	0.3
3	314100 500716 6.0	VALLISNERIA AMER	19.8	11.5 2700 1100 0.1 0.0
11	1 314086 500717 7.0	POT. NARROW	29.9	20.5 4100 600 0.2 0.1
		VALLISNERIA AMER	20.1	13.7
2	314086 500717 7.0	POT. RICHARDSONI	39.7	28.1 4100 600 0.2 0.1
		POT. NARROW	3.8	2.8
		VALLISNERIA AMER	89.3	72.0
3	314086 500717 7.0	VALLISNERIA AMER	125.1	72.3 4100 600 0.2 0.1
12	1 314100 500723 6.5	VALLISNERIA AMER	32.8	14.9 3200 680 0.0 0.0
	2 314100 500723 6.5	VALLISNERIA AMER	15.1	8.9 3200 680 0.0 0.0
3	314100 500723 6.5	VALLISNERIA AMER	11.0	6.7 3200 680 0.0 0.0
13	1 314097 500728 8.0	POT. RICHARDSONI	4.2	3.3 4000 600 0.1 0.0
		POT. NARROW	201.5	145.7
		VALLISNERIA AMER	0.1	0.0
2	314097 500728 8.0	POT. NARROW	71.6	52.1 4000 600 0.1 0.0
3	314097 500728 8.0	POT. NARROW	29.1	21.8 4000 600 0.1 0.0
4	314100 500731 9.0	POT. RICHARDSONI	112.2	70.1 4000 600 0.1 0.0
5	314100 500731 9.0	POT. RICHARDSONI	88.2	62.8 4000 600 0.1 0.0
6	314100 500731 9.0	POT. RICHARDSONI	96.9	64.3 4000 600 0.1 0.0
14	1 314108 500737 8.0	VALLISNERIA AMER	142.5	52.6 3000 500 0.0 0.0
2	314108 500737 8.0	VALLISNERIA AMER	47.6	38.2 3000 500 0.0 0.0
3	314108 500737 8.0	VALLISNERIA AMER	15.3	9.5 3000 500 0.0 0.0

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.) SURFACE BOTTOM
DETROIT	STONY	1	1	314222	- 9.0	VALLISNERIA AMER	62.0	42.2	3600	260	1.7	1.2
			2	314222	- 9.0	VALLISNERIA AMER	120.1	81.0	3600	260	1.7	1.2
			3	314222	- 9.0	VALLISNERIA AMER	22.8	12.9	3600	260	1.7	1.2
		2	1	314215	- 7.0	POT. RICHARDSONI VALLISNERIA AMER	19.6 114.4	14.1 75.7	3500	50	0.4	0.2
			2	314215	- 7.0	POT. GRAMINEUS VALLISNERIA AMER	32.3 80.9	23.6 51.8	3500	50	0.4	0.2
			3	314215	- 7.0	POT. NARROW VALLISNERIA AMER	11.1 75.0	8.9 46.4	3500	50	0.4	0.2
		3	1	314204	- 7.0	POT. RICHARDSONI VALLISNERIA AMER	36.9 47.4	25.5 26.1	1100	72	0.2	0.1
			2	314204	- 7.0	ELODEA CANADENSIS POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	1.0 62.9 40.8 6.8	0.5 42.4 31.9 4.2	1100	72	0.2	0.1
			3	314204	- 7.0	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	77.8 4.7 6.5	54.8 3.4 3.5	1100	72	0.2	0.1
		4	1	314201	- 9.0	MYRIO. SPICATUM POT. CRISPUS VALLISNERIA AMER	89.9 5.6 30.3	65.4 5.2 19.6	3000	200	0.4	0.1
			2	314201	- 9.0	MYRIO. SPICATUM VALLISNERIA AMER	174.4 22.0	123.0 14.3	3000	200	0.4	0.1
			3	314201	- 9.0	MYRIO. SPICATUM VALLISNERIA AMER	121.8 18.6	89.8 12.2	3000	200	0.4	0.1
	5	1	-	-	7.0	POT. ZOSTERIFORM POT. NARROW VALLISNERIA AMER	0.3 15.9 57.1	0.1 12.0 34.8	2100	250	0.6	0.4
			2	-	7.0	POT. NARROW VALLISNERIA AMER	26.1 33.3	20.0 22.9	2100	250	0.6	0.4
			3	-	7.0	POT. NARROW VALLISNERIA AMER	18.4 85.8	12.6 53.8	2100	250	0.6	0.4
		6	1	-	3.0	ELODEA CANADENSIS HETERANTHERA DUB	532.4 TRACE	282.2	2400	62	0.0	0.0
			2	-	3.0	ELODEA CANADENSIS	486.6	259.4	2400	62	0.0	0.0
			3	-	3.0	ELODEA CANADENSIS	486.6	259.4	2400	62	0.0	0.0

3	-	-	3.0	ELODEA CANADENSIS HETERANTHERA DUB	308.0 2.4	211.7 1.9	2400	62	0.0	0.0
7	1	-	3.0	MYRIO. SPICATUM	432.0	331.5	1500	100	0.2	0.1
2	-	-	3.0	MYRIO. SPICATUM VALLISNERIA AMER	112.1 0.3	85.0 0.1	1500	100	0.2	0.1
3	-	-	3.0	MYRIO. SPICATUM VALLISNERIA AMER	103.9 0.5	77.4 0.2	1500	100	0.2	0.1
8	1	-	3.5	ELODEA CANADENSIS HETERANTHERA DUB MYRIO. SPICATUM	2.5 95.5 4.4	1.6 70.8 3.1	4000	1300	0.2	0.2
2	-	-	3.5	ELODEA CANADENSIS HETERANTHERA DUB	2.1 94.9	1.4 68.3	4000	1300	0.2	0.2
3	-	-	3.5	ELODEA CANADENSIS HETERANTHERA DUB MYRIO. SPICATUM	1.1 180.8 8.4	0.7 136.1 6.2	4000	1300	0.2	0.2
9	1	-	6.0	HETERANTHERA DUB VALLISNERIA AMER	2.9 5.0	2.1 3.7	2300	600	2.1	2.0
2	-	-	6.0	ELODEA CANADENSIS HETERANTHERA DUB MYRIO. SPICATUM POT. CRISPUS	14.8 13.4 1.3 2.9	10.2 9.6 1.0 2.0	2300	600	2.1	2.0
3	-	-	6.0	HETERANTHERA DUB MYRIO. SPICATUM POT. CRISPUS	0.9 0.1 1.5	0.7 0.0 1.2	2300	600	2.1	2.0
10	1	-	3.0	MYRIO. SPICATUM VALLISNERIA AMER	50.8 0.8	39.7 0.5	3000	1700	0.5	0.5
2	-	-	3.0	MYRIO. SPICATUM	130.0	91.1	3000	1700	0.5	0.5
3	-	-	3.0	MYRIO. SPICATUM	51.9	32.7	3000	1700	0.5	0.5
11	1	-	4.0	MYRIO. SPICATUM VALLISNERIA AMER	7.4 5.3	3.4 3.7	2000	1100	0.9	0.8
2	-	-	4.0	HETERANTHERA DUB MYRIO. SPICATUM	20.1 151.5	13.8 112.7	2000	1100	0.9	0.8
3	-	-	4.0	MYRIO. SPICATUM VALLISNERIA AMER	23.3 3.5	17.1 2.4	2000	1100	0.9	0.8

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE - LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	CURRENT (FT./SEC.)
	ST. CLAIR STAG	1	1	309021 497380	11.0		NO PLANTS PRESENT				
		2	309021 497380	11.0			NO PLANTS PRESENT				
		3	309021 497380	11.0			NO PLANTS PRESENT				
		2	1	309035 497386	12.0		NO PLANTS PRESENT				
		2	309035 497386	12.0			NO PLANTS PRESENT				
		3	309035 497386	12.0			NO PLANTS PRESENT				
		3	1	309029 497386	11.0		NO PLANTS PRESENT				
		2	309029 497386	11.0			NO PLANTS PRESENT				
		3	309029 497386	11.0			NO PLANTS PRESENT				
		4	1	309038 497390	12.0		NO PLANTS PRESENT				
		2	309038 497390	12.0			NO PLANTS PRESENT				
		3	309038 497390	12.0			NO PLANTS PRESENT				
		5	1	309032 497391	9.0	POT. GRAMINEUS	POT. GRAMINEUS	1.0	0.9	1000	120
						POT. NARROW		115.1	103.4		
		2	309032 497391	9.0		POT. NARROW		330.8	288.1	1000	120
		3	309032 497391	9.0		POT. NARROW		143.3	115.1	1000	120
		6	1	309039 497397	5.0	CHARA SPP.		534.4	183.7	1000	720
						POT. GRAMINEUS		9.9	8.4		
						POT. NARROW		8.7	7.2		
		2	309039 497397	5.0		CHARA SPP.		677.2	213.8	1000	720
						POT. GRAMINEUS		18.0	12.8		
						POT. NARROW		9.0	7.2		
		3	309039 497397	5.0		CHARA SPP.		422.2	143.2	1000	720
						POT. GRAMINEUS		7.3	5.9		
						POT. NARROW					
		7	1	309037 497397	7.5	ELODEA CANADENSIS		7.6	5.5	1100	560
						POT. GRAMINEUS		42.3	29.2		
						POT. NARROW		252.6	202.8		
		2	309037 497397	7.5		POT. NARROW		320.1	280.9	1100	560
		3	309037 497397	7.5		POT. GRAMINEUS		1.9	1.6	1100	560
						POT. NARROW		309.5	274.7		
		4	309034 497396	5.0		POT. RICHARDSONI		289.6	214.7	3500	250
						POT. NARROW		18.2	14.7		
		5	309034 497396	5.0		POT. RICHARDSONI		372.7	275.0	3500	250
						POT. NARROW		24.4	19.6		
		6	309034 497396	5.0		POT. GRAMINEUS		336.4	250.2	3500	250
						POT. NARROW		115.1	96.6		

7	309032	497393	3.0	CHARA SPP. POT. NARROW	617.6 4.1	212.5 3.4	1000	800	1.5	0.2	
8	309032	497393	3.0	CHARA SPP. POT. NARROW	351.0 4.9	144.0 4.1	1000	800	1.5	0.2	
9	309032	497393	3.0	CHARA SPP. POT. NARROW	106.7 153.4	46.2 130.1	1000	800	1.5	0.2	
8	1	309041	497399	5.0	CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. NARROW	175.6 2.0 55.4 2.8	61.3 1.4 39.1 2.4	650	400	0.7	0.1
2	309041	497399	5.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	256.6 82.8 20.1	96.4 65.2 17.2	650	400	0.7	0.1	
3	309041	497399	5.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	90.5 90.6 19.5	32.5 70.4 17.1	650	400	0.7	0.1	
4	309043	497399	6.0	POT. GRAMINEUS POT. NARROW	115.1 105.6	90.3 89.3	590	380	1.0	0.3	
5	309043	497399	6.0	POT. GRAMINEUS POT. NARROW	57.7 241.7	44.8 215.1	590	380	1.0	0.3	
6	309043	497399	6.0	POT. GRAMINEUS POT. NARROW	160.5 133.9	126.6 118.2	590	380	1.0	0.3	
9	1	309034	497400	8.0	ELODEA CANADENS POT. RICHARDSONI	29.9 136.0	22.5 108.4	4000	700	0.6	0.0
2	309034	497400	8.0	ELODEA CANADENS POT. RICHARDSONI NITELLOP. OBTUSA	19.3 88.1 5.5	14.5 72.4 2.8	4000	700	0.6	0.0	
3	309034	497400	8.0	ELODEA CANADENS POT. RICHARDSONI	10.8 93.7	7.9 74.7	4000	700	0.6	0.0	
4	309038	497398	8.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	3.2 3.6 189.2 17.0 22.3	1.5 2.6 161.9 13.9 8.1	3600	390	1.0	0.2	
5	309038	497398	8.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	125.6 132.1 42.8 33.6	90.4 98.7 43.9 28.0	3600	390	1.0	0.2	
6	309038	497398	8.0	ELODEA CANADENS MYRIO. SPICATUM NITELLA HYALINA POT. RICHARDSONI POT. NARROW	29.7 98.3 9.2 45.7 59.2	19.0 78.0 4.8 35.7 47.5	3600	390	1.0	0.2	
0	1	309056	497407	12.0	NITELLA HYALINA	44.7	16.9	41	21	0.4	0.1

2	309056	497407	12.0	CHARA SPP. POT. GRAMINEUS	186.2 15.5	76.4 13.0	41 21	11.6 0.1
3	309056	497407	12.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	77.0 46.7 34.0	32.3 38.3 28.4	41 21	0.4 0.1
11	309046	497409	8.5	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	18.5 9.1 85.7 135.8	12.7 7.3 68.9 114.4	58	0.5 0.0
2	309046	497409	8.5	ELODEA CANADENS POT. RICHARDSONI POT. NARROW	46.8 27.9 311.1	31.0 17.5 245.7	58	0.5 0.0
3	309046	497409	8.5	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	15.7 0.5 83.7 117.1	11.1 0.3 63.6 91.3	58	0.5 0.0
4	309048	497403	11.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI NITELLOP. OBTUSA	2.7 0.7 114.8 0.5	1.7 0.6 77.2 0.1	9	0.3 0.0
5	309048	497403	11.0	ELODEA CANADENS POT. RICHARDSONI NITELLOP. OBTUSA	30.7 114.5 10.4	21.0 88.0 5.1	9	0.3 0.0
6	309048	497403	11.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	13.9 1.9 0.8 80.9 0.4	4.6 1.4 0.5 62.2 0.3	9	0.3 0.0
7	309046	497410	2.5	CHARA SPP. POT. GRAMINEUS	55.5 3.0	16.9 2.5	46 43	0.4 0.3
8	309046	497410	2.5	CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS	231.1 4.7 26.7	84.9 3.7 11.3	46 43	0.4 0.3
9	309046	497410	2.5	CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. NARROW	264.2 8.2 13.1 0.7	93.2 5.9 9.9 0.6	46 43	0.4 0.3
12	309044	497408	8.5	ELODEA CANADENS MYRIO. SPICATUM POT. NARROW	10.6 152.5 2.6	8.4 111.0 2.1	2000 1000	0.3 0.0
2	309044	497408	8.5	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. NARROW	TRACE 1.0 87.2 156.1	0.7 69.8 127.3	1000	0.3 0.0

3	309044	497408	8.5	ELODEA CANADENS MYRIO. SPICATUM	57.6 81.1	43.1 60.1	1000	0.3	0.0	
4	309044	497409	3.0	CHARA SPP. POT. GRAMINEUS	176.9 2.1	56.0 1.7	2500	0.7	0.4	
5	309044	497409	3.0	CHARA SPP.	222.1	75.2	3400	0.7	0.4	
6	309044	497409	3.0	CHARA SPP.	229.3	74.4	3400	0.7	0.4	
7	309041	497408	5.5	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER	182.4 27.5 0.8 53.4 15.1 18.0	53.2 20.2 0.6 43.9 12.0 11.3	390	0.2	0.0	
8	309041	497408	5.5	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI VALLISNERIA AMER	141.2 0.9 27.3 34.4	48.4 0.7 22.3 22.0	390	0.2	0.0	
9	309041	497408	5.5	CHARA SPP. ELODEA CANADENS MYRIO. EXALBESC POT. RICHARDSONI VALLISNERIA AMER	114.2 56.0 3.8 65.2 59.9	34.1 37.6 2.9 51.2 35.1	390	0.2	0.0	
13	1	309060	497414	9.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI NITELLOP. OBUSA	10.0 28.2 65.2 1.2	7.4 21.8 52.2 0.6	1	0.2	0.0
2	309060	497414	9.0	ELODEA CANADENS MYRIO. SPICATUM NAJAS FLEXILIS	44.9 83.9 0.2	32.0 64.1 0.1	1	0.2	0.0	
3	309060	497414	9.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	18.7 104.5 8.7	13.4 82.7 7.0	1	0.2	0.0	
14	1	309068	497418	9.0	POT. RICHARDSONI POT. NARROW	5.9 226.9	5.1 197.2	55	1.5	0.2
2	309068	497418	9.0	CHARA SPP. NITELLA HYALINA POT. NARROW	7.9 13.1 166.3	2.6 4.3 132.8	55	1.5	0.2	
3	309068	497418	9.0	NITELLA HYALINA POT. GRAMINEUS POT. NARROW	TRACE 6.3 113.2	3.2 88.6	55	1.5	0.2	
15	1	309074	497426	2.5	CHARA SPP. POT. GRAMINEUS POT. NARROW	261.7 6.6 0.5	78.2 4.5 0.4	110	0.4	0.2
-	2	309074	497426	2.5	CHARA SPP. POT. NARROW	100.7 0.4	30.2 0.3	110	0.4	0.2
3	309074	497426	2.5	CHARA SPP.	142.9	58.0	110	0.4	0.2	

4	309076 497427	7.0	POT. GRAMINEUS POT. NARROW	9.3 1.9	6.2 1.5		
			NITELLA HYALINA	31.5	12.5	210	100
			POT. GRAMINEUS	110.9	71.1		0.7
5	309076 497427	7.0	CHARA SPP.	3.3	1.1	210	100
			POT. GRAMINEUS	155.4	114.4		0.7
6	309076 497427	7.0	CHARA SPP.	45.9	18.5	210	100
			POT. GRAMINEUS	83.8	58.8		0.7

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
ST. CLAIR FAWN		1	1	309568	498248	10.0	CHARA SPP.	12.1	4.5	3700	110	1.7	0.1
							POT. GRAMINEUS	183.0	146.5				
							POT. NARROW	32.3	26.0				
		2	309568	498248	10.0	POT. RICHARDSONI	213.9	174.7	3700	110	1.7	0.1	
							POT. NARROW	153.8	128.8				
		3	309568	498248	10.0	POT. RICHARDSONI	62.1	51.2	3700	110	1.7	0.1	
							POT. NARROW	41.4	34.7				
		2	309582	498256	8.0	ELODEA CANADENS	8.8	6.2	3100	230	0.3	0.0	
							POT. GRAMINEUS	278.0	214.2				
		2	309582	498256	8.0	ELODEA CANADENS	7.7	5.6	3100	230	0.3	0.0	
							NITELLA HYALINA	23.4	11.5				
							POT. GRAMINEUS	101.2	80.8				
		3	309582	498256	8.0	CHARA SPP.	4.9	1.6	3100	230	0.3	0.0	
							ELODEA CANADENS	1.5	1.0				
							POT. GRAMINEUS	90.7	69.8				
		3	309589	498259	9.0	ELODEA CANADENS	280.6	253.5	3400	8	0.1	0.0	
							POT. RICHARDSONI	12.9	10.3				
		2	309589	498259	9.0	ELODEA CANADENS	271.1	210.1	3400	8	0.1	0.0	
							POT. GRAMINEUS	45.7	29.8				
							POT. RICHARDSONI	13.4	11.1				
							POT. NARROW	0.4	0.2				
		3	309589	498259	9.0	ELODEA CANADENS	177.8	137.1	3400	8	0.1	0.0	
							POT. RICHARDSONI	40.5	32.4				
							POT. NARROW	7.3	6.0				
		4	309586	498257	12.0	ELODEA CANADENS	5.8	4.1	3500	70	0.1	0.0	
							NITELLA HYALINA	TRACE					
							POT. RICHARDSONI	126.2	97.8				
		5	309586	498257	12.0	ELODEA CANADENS	0.5	0.3	3500	70	0.1	0.0	
							MYRIO. SPICATUM	2.2	1.8				
							POT. RICHARDSONI	128.3	99.3				
							POT. NARROW	3.1	2.6				
		6	309586	498257	12.0	ELODEA CANADENS	10.2	7.7	3500	70	0.1	0.0	
							POT. RICHARDSONI	186.7	147.8				
		4	309572	498256	6.0	CHARA SPP.	389.5	114.9	2700	530	0.6	0.1	
							POT. GRAMINEUS	73.5	53.2				
		2	309572	498256	6.0	CHARA SPP.	231.2	67.4	2700	530	0.6	0.1	
							ELODEA CANADENS	1.5	1.0				
							POT. GRAMINEUS	325.4	210.7				
							POT. ZOSTERIFORM	0.8	0.6				

3	309572	498256	6.0	CHARA SPP. ELODEA CANADENS POT. GRAMINEUS POT. NARROW	62.7 1.6 202.2 33.3	21.7 1.1 141.9 25.6	530	0.6	0.1
5	1	309600	498266	9.0	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI POT. NARROW	2.9 68.4 51.7 1.2	1.1 50.5 42.1 0.9	4000 2500	0.7 0.2
2	309600	498266	9.0	CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	24.2 1.0 54.2 67.9 0.3 5.1	7.7 0.6 38.5 54.7 0.2 3.7	4000 2500	0.7 0.2	
3	309600	498266	9.0	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	47.3 62.2 3.2 2.9 18.8	15.3 46.7 2.4 2.3 13.5	4000 2500	0.7 0.2	
6	1	309595	498266	3.0	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI	195.2 0.5 0.4	60.1 0.2 0.3	3800 3000	0.6 0.6
2	309595	498266	3.0	CHARA SPP. NAJAS FLEXILIS TRACE	182.9	58.7	3800 3000	0.6 0.6	
3	309595	498266	3.0	CHARA SPP. NAJAS FLEXILIS	114.9 0.3	32.4 0.1	3800 3000	0.6 0.6	
4	309595	498263	8.5	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI POT. NARROW	3.2 10.5 52.5 84.2	1.2 7.3 41.1 62.9	3900 110	0.4 0.0	
5	309595	498263	8.5	ELODEA CANADENS POT. RICHARDSONI POT. NARROW	260.7 8.9 22.3	188.4 6.7 18.7	3900 110	0.4 0.0	
6	309595	498263	8.5	ELODEA CANADENS POT. GRAMINEUS POT. RICHARDSONI POT. NARROW	80.1 4.9 34.9 22.6	64.8 3.3 28.1 18.7	3900 110	0.4 0.0	
7	1	309584	498266	3.0	CHARA SPP. ELODEA CANADENS NAJAS FLEXILIS TRACE POT. GRAMINEUS POT. RICHARDSONI POT. NARROW	112.5 1.1 42.1 17.7 58.4	46.1 0.7 33.9 14.5 33.9	1500 350	0.2 0.0
2	309584	498266	3.0	POT. GRAMINEUS POT. NARROW	69.3 62.2	55.3 48.8	1500 350	0.2 0.0	
3	309584	498266	3.0	CHARA SPP. POT. GRAMINEUS	25.9 117.1	10.3 88.7	1500 350	0.2 0.0	

			POT. RICHARDSONI	14.9	11.2
			POT. NARROW	52.3	38.7
4	309585	498263	3.0 CHARA SPP.	49.0	16.1 2100 1800 0.8 0.6
5	309585	498263	3.0 CHARA SPP.	73.4	27.1 2100 1800 0.8 0.6
6	309585	498263	3.0 CHARA SPP.	72.5	27.3 2100 1800 0.8 0.6
8	309605	498270	5.0 CHARA SPP.	1.7	0.6 4400 1800 0.5 0.1
			POT. GRAMINEUS	134.2	100.1
			POT. RICHARDSONI	23.5	18.4
			POT. NARROW	TRACE	
			VALLISNERIA AMER	2.7	2.0
2	309605	498270	5.0 CHARA SPP.	7.4	3.0 4400 1800 0.5 0.1
			POT. GRAMINEUS	133.3	102.1
			POT. RICHARDSONI	10.0	8.1
3	309605	498270	5.0 CHARA SPP.	2.1	0.8 4400 1800 0.5 0.1
			POT. GRAMINEUS	159.1	119.2
			POT. RICHARDSONI	49.5	39.6
			POT. NARROW	0.9	0.7
9	309598	498273	2.5 CHARA SPP.	131.4	43.5 4100 3900 0.4 0.2
			POT. GRAMINEUS	1.0	0.6
2	309598	498273	2.5 CHARA SPP.	342.6	98.4 4100 3900 0.4 0.2
			POT. GRAMINEUS	2.4	1.4
3	309598	498273	2.5 CHARA SPP.	219.5	69.7 4100 3900 0.4 0.2
			POT. GRAMINEUS	TRACE	
10	309619	498281	8.0 CHARA SPP.	338.3	117.1 4100 1400 1.1 1.0
			NAJAS FLEXILIS	9.6	7.2
			POT. GRAMINEUS	51.5	38.4
			VALLISNERIA AMER	11.8	8.0
2	309619	498281	8.0 CHARA SPP.	171.6	56.9 4100 1400 1.1 1.0
			NAJAS FLEXILIS	4.9	3.6
			POT. GRAMINEUS	15.4	11.1
			VALLISNERIA AMER	2.5	1.4
3	309619	498281	8.0 CHARA SPP.	159.0	58.3 4100 1400 1.1 1.0
			NAJAS FLEXILIS	7.8	5.4
			POT. GRAMINEUS	20.0	14.2
11	309612	498279	3.5 CHARA SPP.	194.3	61.7 4200 2500 0.6 0.3
			NAJAS FLEXILIS	0.1	0.1
			POT. GRAMINEUS	58.2	45.1
			POT. RICHARDSONI	20.8	16.4
			POT. NARROW	12.3	10.2
			VALLISNERIA AMER	14.5	10.4
2	309612	498279	3.5 CHARA SPP.	163.1	54.5 4200 2500 0.6 0.3
			POT. GRAMINEUS	34.3	24.1
			POT. RICHARDSONI	7.3	4.8
			POT. NARROW	4.4	3.3
			VALLISNERIA AMER	18.5	13.3

3	309612	498279	3.5	CHARA SPP.	34.1	11.1	4200	2500	0.6	0.3
				POT. GRAMINEUS	48.9	31.8				
				POT. RICHARDSONI	26.7	21.4				
				POT. NARROW	11.0	8.6				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
ST. CLAIR RUSSELL	1	1	1	309949	498651	9.0	POT. NODOSUS	2.1	1.7	2000	100	1.5	0.3
							POT. NARROW	95.5	82.9				
							CHARA SPP.	4.0	1.5	2000	100	1.5	0.3
							POT. NATANS	38.5	30.1				
							POT. GRAMINEUS	149.2	127.4				
							POT. NARROW	13.8	11.5	2000	100	1.5	0.3
							POT. GRAMINEUS	137.2	119.2				
							POT. NARROW	122.2	42.9	2700	950	1.9	0.4
							POT. GRAMINEUS	36.7	29.7				
							POT. NARROW	4.7	3.8				
							CHARA SPP.	129.3	48.1	2700	950	1.9	0.4
							POT. GRAMINEUS	54.7	42.1				
							POT. NARROW	28.8	24.5				
							CHARA SPP.	235.8	86.1	2700	950	1.9	0.4
							POT. GRAMINEUS	55.7	43.4				
							POT. NARROW	1.2	0.9				
							ELODEA CANADENS	20.9	15.2	1500	330	0.2	0.1
							POT. RICHARDSONI	42.2	35.2				
							POT. NARROW	32.8	27.3				
							NITELLOP. OBTUSA	57.3	29.4				
							ELODEA CANADENS	5.6	4.0	1500	330	0.2	0.1
							NITELLA HYALINA	5.8	2.8				
							POT. RICHARDSONI	37.3	30.7				
							POT. NARROW	90.9	76.3				
							CHARA SPP.	1.1	0.4	1500	330	0.2	0.1
							ELODEA CANADENS	0.1	0.0				
							POT. NODOSUS	6.0	4.7				
							POT. NARROW	121.9	102.1				
							NITELLOP. OBTUSA	80.0	38.4				
							ELODEA CANADENS	158.4	117.1	3100	1100	0.3	0.1
							MYRIO. SPICATUM	0.5	0.5				
							ELODEA CANADENS	137.6	97.0	3100	1100	0.3	0.1
							ELODEA CANADENS	143.6	110.1	3100	1100	0.3	0.1
							MYRIO. SPICATUM	0.6	0.4				
							POT. GRAMINEUS	0.7	0.6				
							CHARA SPP.	65.7	22.6	1500	5	0.5	0.1
							POT. NATANS	77.0	52.8				
							POT. GRAMINEUS	108.2	78.7				
							VALLISNERIA AMER	15.7	9.6				

2	309955	498659	7.0	CHARA SPP. POT. NATANS POT. GRAMINEUS VALLISNERIA AMER	3.7 68.2 89.0 8.7	1.3 57.1 71.0 6.1	5	0.5	0.1	
3	309955	498659	7.0	CHARA SPP. POT. NATANS POT. GRAMINEUS VALLISNERIA AMER	22.2 71.5 40.5 6.8	7.9 57.8 31.1 4.7	5	0.5	0.1	
5	1	309950	498657	7.0	CHARA SPP. ELODEA CANADENS POT. GRAMINEUS POT. NARROW	1.8 17.8 156.0 64.0	0.6 14.7 120.5 53.9	25	0.3	0.1
2	309950	498657	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	2.5 69.4 11.3	1.1 56.5 9.2	25	0.3	0.1	
3	309950	498657	7.0	CHARA SPP. ELODEA CANADENS POT. GRAMINEUS POT. NARROW	6.9 0.9 119.1 31.0	2.5 0.7 90.4 25.9	25	0.3	0.1	
6	1	309944	498658	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	53.8 119.9 47.5	15.7 84.8 39.3	1500	1.1	0.6
2	309944	498658	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	TRACE 222.7 39.4	2500 182.1 32.4	1500	1.1	0.6	
3	309944	498658	7.0	CHARA SPP. POT. GRAMINEUS	6.5 116.5	2.0 94.3	1500	1.1	0.6	
7	1	309968	498664	4.0	POT. GRAMINEUS POT. RICHARDSONI POT. NARROW	71.5 55.1 54.9	50.8 40.1 46.0	1500	0.5	0.1
2	309968	498664	4.0	ELODEA CANADENS POT. RICHARDSONI POT. NARROW	2.0 117.7 100.7	1.5 88.0 84.5	1500	0.5	0.1	
3	309968	498664	4.0	POT. NODOSUS POT. RICHARDSONI POT. NARROW	6.9 139.3 153.6	5.5 105.2 127.7	1500	0.5	0.1	
8	1	309963	498663	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	11.1 63.3 107.0	4.0 48.3 93.4	250	1.1	0.6
2	309963	498663	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	4.3 31.1 167.8	1.4 25.0 144.4	250	1.1	0.6	
3	309963	498663	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	7.0 26.9 119.5	2.5 21.7 103.2	250	1.1	0.6	

4	309961	498661	4.0	CHARA SPP.	95.3	32.7	2900	1900	0.8	0.7
5	309961	498661	4.0	CHARA SPP.	396.7	128.0	2900	1900	0.8	0.7
				POT. GRAMINEUS	3.2	2.3				
6	309961	498661	4.0	CHARA SPP.	257.7	91.3	2900	1900	0.8	0.7
				POT. GRAMINEUS	5.9	4.7				
9	309954	498664	4.0	CHARA SPP.	189.1	65.8	3000	2000	0.6	0.2
				NAJAS FLEXILIS	1.5	1.0				
				POT. GRAMINEUS	76.4	56.9				
				POT. NARROW	18.4	15.4				
2	309954	498664	4.0	CHARA SPP.	144.8	50.3	3000	2000	0.6	0.2
				NAJAS FLEXILIS	0.5	0.4				
				POT. GRAMINEUS	32.5	26.3				
				POT. NARROW	84.2	70.2				
3	309954	498664	4.0	CHARA SPP.	30.6	10.5	3000	2000	0.6	0.2
				POT. GRAMINEUS	75.3	57.5				
				POT. NARROW	211.0	181.7				
				VALLISNERIA AMER	0.3	0.1				
4	309950	498662	4.0	CHARA SPP.	136.8	43.8	3100	2000	0.6	0.2
5	309950	498662	4.0	CHARA SPP.	205.5	69.6	3100	2000	0.6	0.2
				POT. GRAMINEUS	2.3	1.7				
6	309950	498662	4.0	CHARA SPP.	213.2	71.9	3100	2000	0.6	0.2
				POT. GRAMINEUS	1.2	0.8				

SUBMERGED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE	BOTTOM
DETROIT	BELLE	1	1	312756 499946	8.0	CHARA SPP.	TRACE	2900	41
						POT. RICHARDSONI	135.4	109.9	0.0
						VALLISNERIA AMER	51.0	35.9	0.6
		2	312756 499946	8.0	POT. RICHARDSONI	48.8	38.0	2900	41
						VALLISNERIA AMER	60.5	41.7	0.0
		3	312756 499946	8.0	POT. RICHARDSONI	152.3	112.5	2900	41
						VALLISNERIA AMER	13.7	9.3	0.6
									0.0
	2	1	312765 499956	9.0	VALLISNERIA AMER	85.1	52.8	3100	150
									1.1
									0.7
		2	312765 499956	9.0	VALLISNERIA AMER	67.4	41.0	3100	150
									1.1
									0.7
		3	312765 499956	9.0	POT. NARROW	3.4	2.0	3100	150
						VALLISNERIA AMER	91.9	53.8	1.1
									0.7
	3	1	312777 499962	8.5	POT. CRISPUS	5.0	4.5	3500	31
						POT. RICHARDSONI	310.0	181.4	0.3
						VALLISNERIA AMER	16.6	9.4	0.1
		2	312777 499962	8.5	POT. RICHARDSONI	51.4	35.6	3500	31
						VALLISNERIA AMER	97.7	54.7	0.3
									0.1
		3	312777 499962	8.5	POT. RICHARDSONI	220.0	134.0	3500	31
						POT. NARROW	12.9	10.3	0.3
						VALLISNERIA AMER	28.0	17.9	0.1
	4	1	312785 499969	10.5	CHARA SPP.	1.6	0.6	4500	340
						VALLISNERIA AMER	25.6	16.6	1.1
									0.7
		2	312785 499969	10.5	VALLISNERIA AMER	81.2	51.0	4500	340
									1.1
									0.7
		3	312785 499969	10.5	VALLISNERIA AMER	114.0	75.5	4500	340
									1.1
									0.7
	5	1	312802 499978	8.0	NAJAS FLEXILIS	14.4	8.7	4200	18
						POT. RICHARDSONI	60.4	45.7	0.2
						VALLISNERIA AMER	111.8	66.0	0.1
		2	312802 499978	8.0	POT. RICHARDSONI	244.6	165.6	4200	18
						VALLISNERIA AMER	45.8	29.6	0.2
									0.1
		3	312802 499978	8.0	POT. RICHARDSONI	165.5	101.5	4200	18
						VALLISNERIA AMER	77.1	45.7	0.2
									0.1
	6	1	312808 499983	11.0	CHARA SPP.	TRACE	1000	130	1.4
						VALLISNERIA AMER	103.3	68.0	0.9
		2	312808 499983	11.0	VALLISNERIA AMER	152.9	88.0	1000	130
									1.4
									0.9
		3	312808 499983	11.0	VALLISNERIA AMER	120.3	82.4	1000	130
									1.4
									0.9

4	312818	499987	8.0	CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER	TRACE 53.6 53.7	32.9 25.4	2000	45	0.4	0.1
5	312818	499987	8.0	NITELLA HYALINA POT. GRAMINEUS POT. RICHARDSONI VALLISNERIA AMER	36.7 37.1 54.4 78.8	12.8 22.5 38.6 46.4	2000	45	0.4	0.1
6	312818	499987	8.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI VALLISNERIA AMER	3.8 0.2 126.6 33.4	1.4 0.1 80.4 20.4	2000	45	0.4	0.1
7	312851	499991	4.0	MYRIO. SPICATUM NAJAS FLEXILIS NITELLA HYALINA POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	2.2 0.7 122.9 20.3 47.9 9.1	1.8 0.4 45.9 16.4 26.1 3.2	3500	600	0.1	0.0
2	312851	499991	4.0	MYRIO. SPICATUM POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	1.3 87.8 20.9 9.8	1.0 65.7 12.4 3.0	3500	600	0.1	0.0
3	312851	499991	4.0	NITELLA HYALINA POT. RICHARDSONI VALLISNERIA AMER	128.3 18.7 31.3	46.0 11.4 18.4	3500	600	0.1	0.0
4	312852	499994	7.0	MYRIO. SPICATUM NAJAS FLEXILIS VALLISNERIA AMER NITELLOP. OBTUSA	10.3 0.2 18.3 193.9	7.3 0.1 10.1 65.8	4600	490	0.0	0.0
5	312852	499994	7.0	CHARA SPP. MYRIO. SPICATUM NITELLA HYALINA VALLISNERIA AMER	TRACE 41.5 204.4 45.8	23.5 59.8 26.7	4600	490	0.0	0.0
6	312852	499994	7.0	MYRIO. SPICATUM NAJAS FLEXILIS VALLISNERIA AMER NITELLOP. OBTUSA	2.0 1.7 9.8 288.5	1.4 0.8 5.1 90.3	4600	490	0.0	0.0
8	312837	499991	6.0	MYRIO. SPICATUM VALLISNERIA AMER	229.4 35.6	176.6 24.7	3600	400	0.1	0.1
2	312837	499991	6.0	MYRIO. SPICATUM VALLISNERIA AMER NITELLOP. OBTUSA	182.1 68.8 43.3	130.3 47.2 16.0	3600	400	0.1	0.1
3	312837	499991	6.0	MYRIO. SPICATUM VALLISNERIA AMER NITELLOP. OBTUSA	124.9 3.2 54.9	79.5 2.1 23.3	3600	400	0.1	0.1
4	312841	499991	5.5	MYRIO. SPICATUM NAJAS FLEXILIS VALLISNERIA AMER NITELLOP. OBTUSA	0.6 TRACE 219.9	0.5 0.2 75.1	1100	330	0.2	0.1

5	312841	499991	5.5	MYRIO. SPICATUM NITELLOP. OBTUSA	11.6 262.0	8.2 92.9	1100 330	0.2 0.1
6	312841	499991	5.5	MYRIO. SPICATUM NITELLA HYALINA VALLISNERIA AMER	1.1 448.2 7.5	0.8 141.8 3.6	1100 330	0.2 0.1
9	1	312831	499989	3.0	CHARA SPP. NAJAS FLEXILIS VALLISNERIA AMER	8.0 1.6 161.5	3.0 1.0 79.2	2300 0.4
2	312831	499989	3.0	VALLISNERIA AMER NITELLOP. OBTUSA	51.1 51.8	33.2 18.8	3900 2300	0.4 0.2
3	312831	499989	3.0	CHARA SPP. VALLISNERIA AMER	48.2 205.2	19.4 107.4	3900 2300	0.4 0.2
4	312833	499991	7.0	MYRIO. SPICATUM VALLISNERIA AMER	129.1 14.7	101.9 10.0	4200 490	0.2 0.1
5	312833	499991	7.0	MYRIO. SPICATUM VALLISNERIA AMER	153.7 6.6	115.5 5.0	4200 490	0.2 0.1
6	312833	499991	7.0	MYRIO. SPICATUM VALLISNERIA AMER NITELLOP. OBTUSA	123.5 1.4 34.8	95.9 1.0 14.7	4200 490	0.2 0.1
10	1	312821	499987	4.0	NAJAS FLEXILIS NITELLA HYALINA POT. GRAMINEUS POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	1.0 61.1 7.1 14.4 6.2 17.4	0.7 24.9 4.3 9.3 4.0 7.1	2100 0.7 0.3
2	312821	499987	4.0	CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS POT. RICHARDSONI NITELLOP. OBTUSA	13.1 TRACE 2.6 0.7 82.1	4.8 1.7 0.3 24.3	4500 2100	0.7 0.3
3	312821	499987	4.0	POT. GRAMINEUS POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	63.3 5.6 12.3 82.9	42.8 3.2 8.6 37.2	4500 2100	0.7 0.3

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
DETROIT	HENNEPIN	1	1	314064	500669	5.0	VALLISNERIA AMER	30.0	18.8	2100	250	0.2	0.1
		2	2	314064	500669	5.0	VALLISNERIA AMER	70.6	45.8	2100	250	0.2	0.1
		3	3	314064	500669	5.0	VALLISNERIA AMER	25.6	15.6	2100	250	0.2	0.1
		2	1	314067	500675	6.0	POT. NARROW VALLISNERIA AMER	2.3	1.5	2300	410	0.2	0.1
								37.3	21.3				
		2	2	314067	500675	6.0	VALLISNERIA AMER	98.1	60.9	2300	410	0.2	0.1
		3	3	314067	500675	6.0	VALLISNERIA AMER	103.3	48.1	2300	410	0.2	0.1
		3	1	314074	500682	5.0	VALLISNERIA AMER	149.1	123.3	2500	700	0.1	0.1
		2	2	314074	500682	5.0	VALLISNERIA AMER	76.5	47.8	2500	700	0.1	0.1
		3	3	314074	500682	5.0	VALLISNERIA AMER	101.9	13.3	2500	700	0.1	0.1
		4	1	314088	500692	6.0	VALLISNERIA AMER	66.1	32.6	2700	500	0.1	0.1
		2	2	314088	500692	6.0	VALLISNERIA AMER	134.5	73.3	2700	500	0.1	0.1
		3	3	314088	500692	6.0	CHARA SPP. VALLISNERIA AMER	1.4	0.5	2700	500	0.1	0.1
								74.1	38.8				
		5	1	314070	500686	6.0	VALLISNERIA AMER	42.0	17.9	2700	45	0.5	0.1
		2	2	314070	500686	6.0	VALLISNERIA AMER	187.4	91.3	2700	45	0.5	0.1
		3	3	314070	500686	6.0	VALLISNERIA AMER	151.4	71.6	2700	45	0.5	0.1
		6	1	314078	500695	5.0	VALLISNERIA AMER	116.8	65.4	3100	170	0.2	0.1
		2	2	314078	500695	5.0	VALLISNERIA AMER	207.3	89.5	3100	170	0.2	0.1
		3	3	314078	500695	5.0	VALLISNERIA AMER	141.5	28.7	3100	170	0.2	0.1
		7	1	314095	500702	6.0	VALLISNERIA AMER	37.6	21.3	3400	240	0.2	0.1
		2	2	314095	500702	6.0	VALLISNERIA AMER	86.1	44.8	3400	240	0.2	0.1
		3	3	314095	500702	6.0	VALLISNERIA AMER	42.1	21.4	3400	240	0.2	0.1
		8	1	314084	500702	5.0	VALLISNERIA AMER	93.5	33.4	1100	100	0.1	0.1
		2	2	314084	500702	5.0	VALLISNERIA AMER	68.3	37.7	1100	100	0.1	0.1
		3	3	314084	500702	5.0	VALLISNERIA AMER	167.6	83.1	1100	100	0.1	0.1
		4	4	314079	500707	6.0	MYRIO. SPICATUM VALLISNERIA AMER	106.8	80.5	1200	560	0.2	0.2
								5.5	3.6				

5	314079	500707	6.0	MYRIO. SPICATUM VALLISNERIA AMER	179.8 10.4	117.3 6.5	1200	560	0.2	0.2
6	314079	500707	6.0	MYRIO. SPICATUM VALLISNERIA AMER	207.9 4.3	97.6 2.6	1200	560	0.2	0.2
7	314076	500702	5.0	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	272.1 0.9 1.2	200.6 0.6 0.8	3800	650	0.2	0.1
8	314076	500702	5.0	POT. RICHARDSONI VALLISNERIA AMER	143.8 76.8	102.5 43.7	3800	650	0.2	0.1
9	314076	500702	5.0	MYRIO. SPICATUM POT. RICHARDSONI	3.9 226.9	3.4 164.4	3800	650	0.2	0.1
10	314078	500705	3.0	POT. NARROW	140.9	100.3	1800	1600	0.1	0.0
11	314078	500705	3.0	POT. NARROW	363.7	226.0	1800	1600	0.1	0.0
12	314078	500705	3.0	POT. NARROW	109.3	80.8	1800	1600	0.1	0.0
9	314094	500711	4.0	CHARA SPP. VALLISNERIA AMER	0.6 40.6	0.2 18.1	3600	2200	0.2	0.2
2	314094	500711	4.0	CHARA SPP. VALLISNERIA AMER	0.9 83.0	0.3 12.6	3600	2200	0.2	0.2
3	314094	500711	4.0	VALLISNERIA AMER	60.0	37.4	3600	2200	0.2	0.2
10	314101	500717	7.5	HETERANTHERA DUB	15.3	6.6	3600	1000	0.1	0.1
2	314101	500717	7.5	HETERANTHERA DUB	3.2	1.7	3600	1000	0.1	0.1
3	314101	500717	7.5	CHARA SPP. VALLISNERIA AMER	1.4 18.1	0.4 9.5	3600	1000	0.1	0.1
11	314088	500717	8.0	HETERANTHERA DUB VALLISNERIA AMER	2.2 114.6	7.9 15.3	3700	130	0.1	0.1
2	314088	500717	8.0	CHARA SPP. VALLISNERIA AMER	2.0 102.4	0.8 14.7	3700	130	0.1	0.1
3	314088	500717	8.0	VALLISNERIA AMER	40.2	19.4	3700	130	0.1	0.1
4	314086	500716	7.0	POT. NARROW VALLISNERIA AMER	124.9 39.9	34.6 10.6	4000	25	0.3	0.1
5	314086	500716	7.0	POT. NARROW VALLISNERIA AMER	128.9 50.2	35.4 26.2	4000	25	0.3	0.1
6	314086	500716	7.0	POT. NARROW VALLISNERIA AMER	91.2 57.0	22.6 30.6	4000	25	0.3	0.1
12	314099	500726	6.0	NAJAS FLEXILIS POT. RICHARDSONI VALLISNERIA AMER	TRACE 1.4 123.4		1500	200	0.5	0.2
2	314099	500726	6.0	VALLISNERIA AMER	93.5	173.9	1500	200	0.5	0.2

3	314089	500726	6.0	CHARA SPP.	TRACE		1500	200	0.5	0.2
				HETERANTHERA DUB	0.3	0.2				
				VALLISNERIA AMER	44.5	24.1				
13	1	314100	500733	8.0	POT. RICHARDSONI	88.8	17.4	2400	210	0.6
				POT. NARROW	1.3	0.9				0.0
2	314100	500733	8.0	POT. RICHARDSONI	43.5	19.6	2400	210	0.6	0.0
				VALLISNERIA AMER	TRACE					
3	314100	500733	8.0	POT. RICHARDSONI	24.2	18.7	2400	210	0.6	0.0
4	314103	500732	9.0	VALLISNERIA AMER	127.1	55.0	3500	15	0.1	0.2
5	314103	500732	9.0	VALLISNERIA AMER	55.2	9.1	3500	15	0.1	0.2
6	314103	500732	9.0	ELODEA CANADENSIS	1.8	1.2	3500	15	0.1	0.2
				NAJAS FLEXILIS	0.3	0.2				
				VALLISNERIA AMER	40.1	23.3				
14	1	314108	500736	8.0	VALLISNERIA AMER	60.4	27.9	2000	120	0.3
										0.1
2	314108	500736	8.0	VALLISNERIA AMER	109.6	47.8	2000	120	0.3	0.1
3	314108	500736	8.0	VALLISNERIA AMER	56.6	13.0	2000	120	0.3	0.1

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.) SURFACE BOTTOM
DETROIT	STONY	1	1	314223 500981	7.0	VALLISNERIA AMER	150.5	90.1	2300	51	0.7	0.0
			2	314223 500981	7.0	VALLISNERIA AMER	131.3	84.4	2300	51	0.7	0.0
			3	314223 500981	7.0	VALLISNERIA AMER	160.6	120.0	2300	51	0.7	0.0
		2	1	314217 500976	6.0	POT. NARROW VALLISNERIA AMER	0.6	0.5	2100	180	0.5	0.3
			2	314217 500976	6.0	VALLISNERIA AMER	125.5	62.0				
			3	314217 500976	6.0	VALLISNERIA AMER	156.4	92.8	2100	180	0.5	0.3
		3	1	314205 500976	6.0	MYRIO. SPICATUM VALLISNERIA AMER	27.4	16.1	1500	6	0.5	0.1
			2	314205 500976	6.0	MYRIO. SPICATUM VALLISNERIA AMER	130.4	91.7	1500	6	0.5	0.1
			3	314205 500976	6.0	MYRIO. SPICATUM VALLISNERIA AMER	287.3	206.5	1500	6	0.5	0.1
		4	1	314199 500975	6.0	MYRIO. SPICATUM VALLISNERIA AMER	125.8	92.8	1800	230	0.5	0.2
			2	314199 500975	6.0	MYRIO. SPICATUM VALLISNERIA AMER	57.9	40.1	1800	230	0.5	0.2
			3	314199 500975	6.0	MYRIO. SPICATUM VALLISNERIA AMER	169.1	108.6	1800	230	0.5	0.2
		5	1	314217 500983	6.0	VALLISNERIA AMER	34.8	18.5	2900	150	0.8	0.1
			2	314217 500983	6.0	VALLISNERIA AMER	96.1	58.1	2900	150	0.8	0.1
			3	314217 500983	6.0	VALLISNERIA AMER	107.8	59.2	2900	150	0.8	0.1
		6	1	314220 500983	2.0	ELODEA CANADENSIS VALLISNERIA AMER	0.4	0.3	1100	210	0.1	0.0
			2	314220 500983	2.0	MYRIO. SPICATUM VALLISNERIA AMER	192.0	113.2				
			3	314220 500983	2.0	VALLISNERIA AMER	157.4	98.8	1100	210	0.1	0.0
7		1	314235 500990	2.5	MYRIO. SPICATUM VALLISNERIA AMER	53.6	40.0	1000	270	0.3	0.2	
		2	314235 500990	2.5	HETERANTHERA DUB MYRIO. SPICATUM	2.8	2.0	1000	270	0.3	0.2	
		3	314235 500990	2.5	HETERANTHERA DUB	6.8	4.7	1000	270	0.3	0.2	

8	1	314227	500990	4.0	MYRID. SPICATUM	169.2	116.6						
					ELDEA CANADENS	0.4	0.2	2500	210	0.1	0.1	0.1	0.1
					HETERANTHERA DUB	324.2	218.6						
					MYRID. SPICATUM	14.3	10.0						
					POT. CRISPUS	5.5	4.8						
	2	314227	500990	4.0	HETERANTHERA DUB	178.1	134.4	2500	210	0.1	0.1	0.1	0.1
	3	314227	500990	4.0	ELDEA CANADENS	1.4	1.0	2500	210	0.1	0.1	0.1	0.1
					HETERANTHERA DUB	260.6	188.4						
9	1	314244	500996	4.0	MYRID. SPICATUM	133.8	102.5	1600	1300	0.5	0.5	0.4	0.4
	2	314244	500996	4.0	MYRID. SPICATUM	377.2	290.7	1600	1300	0.5	0.5	0.4	0.4
					VALLISNERIA AMER	2.3	1.5						
	3	314244	500996	4.0	HETERANTHERA DUB	4.1	3.0	1600	1300	0.5	0.5	0.4	0.4
					MYRID. SPICATUM	324.8	239.1						
10	1	314246	501000	2.0	MYRID. SPICATUM	0.2	0.1	3500	800	0.3	0.3	0.2	0.2
					VALLISNERIA AMER	194.2	96.8						
	2	314246	501000	2.0	VALLISNERIA AMER	309.2	154.1	3500	800	0.3	0.3	0.2	0.2
	3	314246	501000	2.0	VALLISNERIA AMER	139.1	83.9	3500	800	0.3	0.3	0.2	0.2
11	1	314252	501004	3.0	VALLISNERIA AMER	117.3	64.8	1800	-	0.6	0.6	-	-
	2	314252	501004	3.0	VALLISNERIA AMER	158.1	91.8	1800	-	0.6	0.6	-	-
	3	314252	501004	3.0	VALLISNERIA AMER	115.5	72.4	1800	-	0.6	0.6	-	-

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES)	CURRENT(FT./SEC.)		
ST. CLAIR STAG	1		1	309028 497379	12.0	NO PLANTS PRESENT			510	330	3.0	2.8
			2	309028 497379	12.0	NO PLANTS PRESENT			510	330	3.0	2.8
			3	309028 497379	12.0	NO PLANTS PRESENT			510	330	3.0	2.8
		2	1	309039 497385	12.0	NO PLANTS PRESENT			1100	550	3.0	2.9
			2	309039 497385	12.0	NO PLANTS PRESENT			1100	550	3.0	2.9
			3	309039 497385	12.0	NO PLANTS PRESENT			1100	550	3.0	2.9
		3	1	309029 497386	10.5	NO PLANTS PRESENT			510	340	2.9	2.5
			2	309029 497386	10.5	NO PLANTS PRESENT			510	340	2.9	2.5
			3	309029 497386	10.5	NO PLANTS PRESENT			510	340	2.9	2.5
	4	1	309044 497393	12.0	NO PLANTS PRESENT			820	580	2.9	2.8	
		2	309044 497393	12.0	NO PLANTS PRESENT			820	580	2.9	2.8	
		3	309044 497393	12.0	NO PLANTS PRESENT			820	580	2.9	2.8	
	5	1	309027 497392	7.0	NO PLANTS PRESENT			600	300	2.8	2.2	
		2	309027 497392	7.0	NO PLANTS PRESENT			600	300	2.8	2.2	
		3	309027 497392	7.0	NO PLANTS PRESENT			600	300	2.8	2.2	
	6	1	309042 497402	5.0	CHARA SPP. POT. NARROW	0.6 35.3	0.2 21.5	580	2.6	2.0		
		2	309042 497402	5.0	POT. GRAMINEUS POT. NARROW	4.6 19.3	2.9 12.3	580	2.6	2.0		
		3	309042 497402	5.0	POT. NARROW	6.2	5.0	580	2.6	2.0		
	4	309043 497403	3.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	11.6 5.8 1.7	4.8 3.5 1.1	1000	2.2	1.7			
		5	309043 497403	3.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	TRACE 23.0 2.0	8.8 1.2	1000	2.2	1.7		
		6	309043 497403	3.0	CHARA SPP. POT. GRAMINEUS	0.3 23.7	0.1 14.2	1000	2.2	1.7		
	7	1	309035 497405	8.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. CRISPUS POT. RICHARDSONI	7.5 7.4 0.2 19.4 9.4	4.7 5.2 0.1 13.2 6.5	520	0.8	0.8		
		2	309035 497405	8.0	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI	0.9 1.9 30.1	0.6 1.1 22.7	520	0.8	0.8		
		3	309035 497405	8.0	CHARA SPP. ELODEA CANADENS POT. BROAD	4.2 11.2 8.7	2.6 8.1 7.4	520	0.8	0.8		

				POT. CRISPUS	1.7	1.6				
4	309036	497397	6.0	POT. GRAMINEUS	5.6	3.8	1500	780	1.9	0.4
				POT. RICHARDSONI	10.8	6.8				
				POT. NARROW	27.4	18.6				
5	309036	497397	6.0	POT. NARROW	47.9	31.8	1500	780	1.9	0.4
6	309036	497397	6.0	POT. GRAMINEUS	3.5	2.0	1500	780	1.9	0.4
				POT. NARROW	60.6	39.4				
7	309040	497402	2.5	CHARA SPP.	0.9	0.6	1800	900	2.2	1.0
				POT. GRAMINEUS	4.1	2.8				
8	309040	497402	2.5	CHARA SPP.	7.3	5.0	1800	900	2.2	1.0
				POT. GRAMINEUS	5.6	4.0				
				POT. NARROW	1.1	0.8				
9	309040	497402	2.5	CHARA SPP.	43.1	20.3	1800	900	2.2	1.0
				POT. GRAMINEUS	7.3	3.1				
8	309045	497408	7.0	CHARA SPP.	2.0	1.0	3900	2300	0.9	0.1
				ELODEA CANADENS	1.6	1.0				
				MYRIO. SPICATUM	172.8	121.4				
				POT. BROAD	1.3	0.9				
2	309045	497408	7.0	CHARA SPP.	1.7	0.9	3900	2300	0.9	0.1
				ELODEA CANADENS	0.7	0.3				
				MYRIO. SPICATUM	131.9	77.3				
				POT. BROAD	9.9	0.8				
3	309045	497408	7.0	CHARA SPP.	3.8	2.1	3900	2300	0.9	0.1
				ELODEA CANADENS	4.8	3.4				
				MYRIO. SPICATUM	49.4	32.4				
				POT. BROAD	0.8	0.7				
				POT. RICHARDSONI	6.0	3.4				
4	309042	497402	4.5	CHARA SPP.	0.9	0.4	1500	1200	2.3	1.9
				POT. NARROW	21.1	16.0				
5	309042	497402	4.5	CHARA SPP.	185.6	74.5	1500	1200	2.3	1.9
				POT. NARROW	56.4	38.8				
6	309042	497402	4.5	CHARA SPP.	1.9	1.0	1500	1200	2.3	1.9
				POT. NARROW	58.7	47.7				
9	309037	497407	8.0	CHARA SPP.	1.7	0.5	3500	2100	0.5	0.1
				ELODEA CANADENS	2.0	1.4				
				MYRIO. EXALBESC	1.3	1.1				
				POT. CRISPUS	22.6	19.0				
				POT. ZOSTERIFORM	3.4	2.9				
2	309037	497407	8.0	CHARA SPP.	0.2	0.1	3500	2100	0.5	0.1
				POT. BROAD	1.7	1.5				
				POT. CRISPUS	1.8	1.5				
3	309037	497407	8.0	ELODEA CANADENS	6.7	1.1	3500	2100	0.5	0.1
				MYRIO. EXALBESC	3.8	3.0				
				POT. CRISPUS	44.9	33.5				

4	309036	497406	2.5	CHARA SPP.	77.4	51.3	900	780	0.1	0.0
5	309036	497406	2.5	CHARA SPP.	12.7	4.7	900	780	0.1	0.0
6	309036	497406	2.5	CHARA SPP.	29.3	13.1	900	780	0.1	0.0
				ELODEA CANADENS	0.1	0.1				
7	309039	497402	10.0	CHARA SPP.	3.3	1.8	2300	780	1.9	1.3
				ELODEA CANADENS	27.1	16.3				
				MYRIO. SPICATUM	22.9	17.7				
				POT. BROAD	1.3	1.0				
8	309039	497402	10.0	CHARA SPP.	7.2	3.8	2300	780	1.9	1.3
				ELODEA CANADENS	2.9	1.9				
				POT. RICHARDSONI	8.1	4.2				
				POT. NARROW	1.2	1.0				
9	309039	497402	10.0	CHARA SPP.	5.2	2.5	2300	780	1.9	1.3
				ELODEA CANADENS	20.3	11.8				
				MYRIO. SPICATUM	0.5	0.2				
				POT. RICHARDSONI	9.7	5.5				
				POT. NARROW	8.1	5.5				
10	309056	497412	9.0	CHARA SPP.	36.7	18.8	1500	500	1.7	0.7
				ELODEA CANADENS	59.1	36.0				
				NITELLA HYALINA	1.7	1.2				
				POT. NARROW	41.5	31.4				
2	309056	497412	9.0	CHARA SPP.	109.5	53.8	1500	500	1.7	0.7
				ELODEA CANADENS	16.2	10.5				
				POT. NARROW	24.1	17.5				
3	309056	497412	9.0	CHARA SPP.	13.7	6.6	1500	500	1.7	0.7
				ELODEA CANADENS	32.2	17.7				
				POT. RICHARDSONI	1.8	1.4				
				POT. NARROW	2.9	2.2				
11	309046	497414	3.5	CHARA SPP.	70.1	29.4	1300	900	0.3	0.0
				POT. NARROW	1.1	0.9				
2	309046	497414	3.5	CHARA SPP.	154.4	61.0	1300	900	0.3	0.0
3	309046	497414	3.5	CHARA SPP.	74.2	30.3	1300	900	0.3	0.0
				ELODEA CANADENS	0.4	0.3				
				POT. NARROW	2.3	2.1				
4	309045	497410	6.2	ELODEA CANADENS	72.4	38.7	4800	3500	0.3	0.1
				MYRIO. SPICATUM	21.0	14.0				
				POT. NARROW	48.7	35.6				
5	309045	497410	6.2	CHARA SPP.	TRACE		4800	3500	0.3	0.1
				ELODEA CANADENS	18.1	11.2				
				POT. NARROW	48.3	35.8				
6	309045	497410	6.2	CHARA SPP.	TRACE		4800	3500	0.3	0.1
				ELODEA CANADENS	84.5	57.1				
				POT. RICHARDSONI	6.1	4.7				
				POT. NARROW	13.0	10.2				
7	309054	497413	9.0	ELODEA CANADENS	2.6	1.6	2400	810	1.6	1.2

		MYRIO. EXALBESC	TRACE						
		NITELLA HYALINA	142.9					81.6	
		POT. NARROW	19.2					13.1	
8	309054	497413	9.0	ELODEA CANADENS	5.0	3.4	2400	810	1.6
		NITELLA HYALINA	129.0					70.7	1.2
		POT. NARROW	14.1					9.9	
9	309054	497413	9.0	CHARA SPP.	96.4	45.2	2400	810	1.6
		POT. NARROW	0.2					0.1	1.2
10	309054	497414	8.0	ELODEA CANADENS	10.2	6.9	2500	800	1.6
		NITELLA HYALINA	45.5					26.9	1.3
		POT. NARROW	27.6					19.6	
11	309054	497414	8.0	CHARA SPP.	8.2	3.4	2500	800	1.6
		ELODEA CANADENS	17.8					9.6	1.3
		NITELLA HYALINA	105.6					52.2	
		POT. NARROW	36.6					21.1	
12	309054	497414	8.0	ELODEA CANADENS	1.4	0.7	2500	800	1.6
		NITELLA HYALINA	3.4					1.6	1.3
		POT. RICHARDSONI	2.6					1.7	
		POT. NARROW	21.0					14.8	
12	1	309041	497413	3.0	CHARA SPP.	446.2	309.9	3500	2500
								0.1	0.0
2	309041	497413	3.0	CHARA SPP.	470.7	337.2	3500	2500	0.1
								0.1	0.0
3	309041	497413	3.0	CHARA SPP.	389.6	294.2	3500	2500	0.1
								0.1	0.0
4	309044	497411	7.0	ELODEA CANADENS	65.7	45.2	2500	1400	0.6
		POT. BROAD	3.2					13.8	0.0
5	309044	497411	7.0	ELODEA CANADENS	37.6	23.9	2500	1400	0.6
		MYRIO. SPICATUM	1.6					1.1	0.0
		NITELLA HYALINA	0.5					0.3	
		POT. BROAD	1.2					0.9	
		POT. NARROW	1.6					1.2	
6	309044	497411	7.0	CHARA SPP.	0.3	0.1	2500	1400	0.6
		ELODEA CANADENS	14.1					9.4	0.0
		MYRIO. SPICATUM	0.5					0.4	
		POT. NARROW	5.4					3.9	
13	1	309057	497413	11.0	CHARA SPP.	3.8	1.8	3000	520
		ELODEA CANADENS	5.1					2.9	0.6
		NITELLA HYALINA	112.5					58.1	
		POT. GRAMINEUS	3.0					2.2	
2	309057	497413	11.0	CHARA SPP.	3.0	1.4	3000	520	0.6
		ELODEA CANADENS	10.9					7.7	
		MYRIO. SPICATUM	0.3					0.2	
		NITELLA HYALINA	93.6					52.3	
		POT. BROAD	3.7					2.9	
		POT. NARROW	0.9					0.7	
3	309057	497413	11.0	CHARA SPP.	131.5	62.8	3000	520	0.6
		ELODEA CANADENS	5.9					3.7	
		POT. RICHARDSONI	0.6					0.5	

			POT. NARROW		0.6	0.4	
14	1	-	-	NO PLANTS PRESENT	-	-	-
	2	-	-	NO PLANTS PRESENT	-	-	-
	3	-	-	NO PLANTS PRESENT	-	-	-
15	1	309076	497428	7.0 POT. GRAMINEUS	27.6	15.7	3000 1200 2.2 1.6
	2	309076	497428	7.0 CHARA SPP.	2.1	0.7	3000 1200 2.2 1.6
				POT. GRAMINEUS	17.0	11.5	
	3	309076	497428	7.0 CHARA SPP.	0.3	0.1	3000 1200 2.2 1.6
				POT. GRAMINEUS	2.9	2.0	
	4	309073	497430	3.0 CHARA SPP.	39.7	18.4	3500 3100 1.3 0.9
	5	309073	497430	3.0 CHARA SPP.	17.2	7.3	3500 3100 1.3 0.9
				POT. NARROW	0.4	0.3	
	6	309073	497430	3.0 CHARA SPP.	182.8	132.6	3500 3100 1.3 0.9
				POT. NARROW	0.2	0.1	

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

L-65

6	1	309590	498270	3.0	CHARA SPP.	2.6	1.7	3200	1900	1.8	1.3
	2	309590	498270	3.0	CHARA SPP.	10.0	4.8	3200	1900	1.8	1.3
	3	309590	498270	3.0	CHARA SPP.	8.3	4.4	3200	1900	1.8	1.3
7	1	309584	498268	3.0	CHARA SPP.	17.9	8.0	3700	2900	1.0	0.5
	2	309584	498268	3.0	CHARA SPP.	31.5	18.6	3700	2900	1.0	0.5
	3	309584	498268	3.0	CHARA SPP. POT. GRAMINEUS	12.7 3.2	5.8 1.8	3700	2900	1.0	0.5
8	1	309606	498275	4.0	CHARA SPP.	12.2	6.8	3400	1900	0.9	0.7
	2	309606	498275	4.0	CHARA SPP.	21.3	6.2	3400	1900	0.9	0.7
	3	309606	498275	4.0	CHARA SPP. POT. NARROW	4.3 0.8	2.2 0.5	3400	1900	0.9	0.7
9	1	309601	498277	3.0	POT. RICHARDSONI	5.2	3.1	3600	2100	1.7	1.5
	2	309601	498277	3.0	POT. RICHARDSONI POT. NARROW	9.6 3.7	7.5 2.2	3600	2100	1.7	1.5
	3	309601	498277	3.0	POT. RICHARDSONI	26.6	18.3	3600	2100	1.7	1.5
	4	309593	498273	2.5	CHARA SPP. POT. GRAMINEUS POT. NARROW	0.5 2.5 8.8	0.2 2.1 6.1	1500	1300	1.6	1.1
	5	309593	498273	2.5	POT. CRISPUS POT. NARROW	2.9 1.8	2.2 1.3	1500	1300	1.6	1.1
	6	309593	498273	2.5	POT. GRAMINEUS POT. RICHARDSONI POT. NARROW	4.6 3.9 0.5	3.4 3.0 0.3	1500	1300	1.6	1.1
10	1	309619	498284	2.0	CHARA SPP. POT. CRISPUS	10.0 5.5	7.3 4.4	3800	3000	1.2	0.7
	2	309619	498284	2.0	CHARA SPP. POT. GRAMINEUS	4.8 6.4	3.7 4.6	3800	3000	1.2	0.7
	3	309619	498284	2.0	CHARA SPP. POT. GRAMINEUS	3.4 6.3	2.3 4.8	3800	3000	1.2	0.7
	4	309619	498285	4.0	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI	163.8 16.5 9.8	81.4 11.8 7.6	3400	2500	1.1	0.9
	5	309619	498285	4.0	CHARA SPP. POT. GRAMINEUS POT. RICHARDSONI	21.9 3.7 25.9	11.1 3.1 19.6	3400	2500	1.1	0.9
	6	309619	498285	4.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	2693.3 7.3 2.8	1706.8 5.5 2.2	3400	2500	1.1	0.9

11	1	309615	498283	3.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	1.3 5.9 0.7	0.6 3.2 0.4	1800	0.7	0.5
	2	309615	498283	3.0	POT. GRAMINEUS	9.4	5.9	3600	0.7	0.5
	3	309615	498283	3.0	CHARA SPP. POT. GRAMINEUS VALLISNERIA AMER	0.7 0.9 0.5	0.3 0.7 0.3	1800	0.7	0.5
	4	309616	498279	4.0	CHARA SPP.	17.8	10.6	4500	1.0	0.8
	5	309616	498279	4.0	CHARA SPP.	38.2	16.3	4500	1.0	0.8
	6	309616	498279	4.0	CHARA SPP. POT. NARROW	96.9 0.2	47.0 0.1	3100	1.0	0.8

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	SURFACE	BOTTOM	CURRENT (FT./SEC.) SURFACE BOTTOM																																				
ST. CLAIR RUSSELL		1	1	309953 498657	10.0	CHARA SPP.	3.8	1.2	4000	450	2.5	0.8																																				
						POT. NARROW	33.7	17.4																																								
						2	2	309953 498657	10.0	CHARA SPP.	TRACE	4.1	4000	450	2.5	0.8																																
										POT. NARROW	6.0																																					
										3	3	309953 498657	10.0	CHARA SPP.	0.1	0.1	4000	450	2.5	0.8																												
														POT. GRAMINEUS	2.5	1.9																																
														POT. GRAMINEUS	9.7	6.8																																
														2	2	309944 498653	8.5	CHARA SPP.	52.8	28.0	3500	1700	2.3	2.1																								
																		NITELLA HYALINA	2.6	1.9																												
																		POT. GRAMINEUS	3.8	2.6																												
																		2	2	309944 498653	8.5	CHARA SPP.	80.8	30.9	3500	1700	2.3	2.1																				
																						POT. GRAMINEUS	2.9	2.2																								
																						POT. NARROW	1.3	0.9																								
																						3	3	309944 498653	8.5	CHARA SPP.	67.9	32.1	3500	1700	2.3	2.1																
																										POT. NARROW	1.5	1.3																				
																										4	4	309944 498655	8.5	ELODEA CANADENS	0.1	0.0	3000	1600	2.4	1.9												
																														POT. GRAMINEUS	14.1	10.2																
																														5	5	309944 498655	8.5	CHARA SPP.	19.6	8.9	3000	1600	2.4	1.9								
																																		POT. GRAMINEUS	6.0	3.9												
																																		6	6	309944 498655	8.5	CHARA SPP.	0.8	0.4	3000	1600	2.4	1.9				
																																						POT. GRAMINEUS	16.2	8.7								
																																						3	3	309970 498663	11.0	CHARA SPP.	1.5	0.7	3800	1300	2.5	1.1
																																										ELODEA CANADENS	14.8	10.9				
																																										2	2	309970 498663	11.0	CHARA SPP.	6.6	3.3
ELODEA CANADENS	15.9	11.5																																														
POT. RICHARDSONI	1.8	1.5																																														
POT. NARROW	1.4	0.9																																														
3	3	309970 498663	11.0	CHARA SPP.	7.0	3.4	3800	1300	2.5																																					1.1		
				ELODEA CANADENS	28.0	20.3																																										
				NITELLA HYALINA	TRACE																																											
				POT. BROAD	1.5	1.2																																										
				POT. ZOSTERIFORM	1.0	0.7																																										
				4	4	309968 498662	7.0	POT. RICHARDSONI	19.1	13.1	3800	1900	1.8	0.5																																		
								2	2	309968 498662	7.0	CHARA SPP.	1.0	0.5	3800	1900	1.8																													0.5		
												ELODEA CANADENS	1.0	0.6																																		
												POT. RICHARDSONI	33.3	20.0																																		
												3	3	309968 498662	7.0	CHARA SPP.	2.7	1.2	3800	1900	1.8																									0.5		
																POT. RICHARDSONI	24.2	18.3																														

5	1	-	-	8.0	CHARA SPP. ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI POT. NARROW	12.4 4.0 4.0 12.7 8.8	6.3 2.4 2.7 8.1 6.1	3800 1700	1.8 1.8 1.3
2	-	-	-	8.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	4.2 5.5 3.8	2.0 2.5 2.0	3800 1700	1.8 1.3
3	-	-	-	8.0	POT. RICHARDSONI	5.4	3.6	3800 1700	1.8 1.3
6	1	-	-	6.0	CHARA SPP. POT. GRAMINEUS	93.2 0.3	42.3 0.2	3800 1900	1.8 1.5
2	-	-	-	6.0	CHARA SPP. ELODEA CANADENS	50.7 0.3	23.9 0.1	3800 1900	1.8 1.5
3	-	-	-	6.0	CHARA SPP. POT. GRAMINEUS	19.6 0.5	10.4 0.3	3800 1900	1.8 1.5
7	1	309974	498666	3.5	CHARA SPP. POT. NARROW	102.9 4.1	47.1 3.3	3800 3500	1.6 1.5
2	309974	498666	3.5	CHARA SPP. POT. NARROW	156.2 0.2	52.6 0.2	3800 3500	1.6 1.5	
3	309974	498666	3.5	CHARA SPP. POT. NARROW	16.2 9.4	7.9 7.4	3800 3500	1.6 1.5	
4	309977	498664	10.0	POT. RICHARDSONI	44.3	36.1	3800 1300	2.3 2.3	1.7
5	309977	498664	10.0	NITELLA HYALINA POT. RICHARDSONI	0.1 32.1	0.0 21.2	3800 1300	2.3	1.7
C	309977	498664	10.0	POT. RICHARDSONI	22.5	18.6	3800 1300	2.3	1.7
8	1	309963	498664	6.5	CHARA SPP. POT. GRAMINEUS POT. NARROW	3.2 1.9 15.4	1.2 1.2 11.3	4500 2800	1.9 1.4
2	309963	498664	6.5	CHARA SPP. POT. GRAMINEUS POT. NARROW	5.4 8.9 25.2	2.6 5.5 20.2	4500 2800	1.9	1.4
3	309963	498664	6.5	CHARA SPP. POT. GRAMINEUS POT. NARROW	2.7 5.0 26.2	1.4 3.2 19.5	4500 2800	1.9	1.4
4	309968	498665	4.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI POT. NARROW	0.2 0.3 4.2 18.6	0.1 0.1 2.6 13.4	3000 1700	2.1	0.6
5	309968	498665	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	18.8 0.9 72.2	7.3 0.7 52.7	3000 1700	2.1	0.6
6	309968	498665	4.0	CHARA SPP.	0.3	0.1	3000 1700	2.1	0.6

9	1	309957 498662 5.5	CHARA SPP.	POT. RICHARDSONI POT. NARROW	1.0 22.5	0.6 16.6	
					196.1	75.6 2000	1200 1.6 1.4
	2	309957 498662 5.5	CHARA SPP.	POT. NARROW	141.1	56.7 2000	1200 1.6 1.4
					0.5	0.4	
	3	309957 498662 5.5	CHARA SPP.	POT. NARROW	105.6	81.4 2000	1200 1.6 1.4
					0.3	0.2	

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LOTRAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.) SURFACE	BOTTOM		
DETROIT	BELLE	1	1	312761 499953	9.0	POT. NARROW	2.1	1.3	3000	370	0.8	0.4			
					VALLISNERIA AMER	1.4	1.0								
			2	312761 499953	9.0	POT. NARROW	0.8	0.2	3000	370	0.8	0.4			
						VALLISNERIA AMER	6.2	4.5							
		3	312761 499953	9.0	VALLISNERIA AMER	7.5	5.5	3000	370	0.8	0.4				
			2	1	312766 499958	8.0	POT. RICHARDSONI	0.8	0.5	3500	450	0.3	0.1		
						VALLISNERIA AMER	4.1	3.9							
		2	312766 499958	8.0	VALLISNERIA AMER	1.4	0.9	3500	450	0.3	0.1				
			3	312766 499958	8.0	POT. NARROW	0.2	0.1	3500	450	0.3	0.1			
						VALLISNERIA AMER	0.9	0.6							
				3	1	312779 499966	4.0	POT. CRISPUS	9.9	7.3	3000	150	0.8	0.3	
							POT. RICHARDSONI	3.7	2.7						
					POT. NARROW	1.0	0.6								
						VALLISNERIA AMER	1.7	1.1							
2	312779 499966			4.0	CHARA SPP.	0.2	0.1	3000	150	0.8	0.3				
					POT. RICHARDSONI	2.6	1.8								
					POT. NARROW	1.7	1.1								
3	312779 499966			4.0	POT. CRISPUS	2.9	2.5	3000	150	0.8	0.3				
					POT. RICHARDSONI	14.1	11.3								
					POT. NARROW	0.6	0.3								
						VALLISNERIA AMER	2.5	1.7							
4	312786 499972			5.0	CHARA SPP.	3.2	0.9	3600	820	0.8	0.5				
			POT. NARROW	0.1	0.1										
			VALLISNERIA AMER	0.4	0.3										
2	312786 499972	5.0	POT. NARROW	0.3	0.1	3600	820	0.8	0.5						
			VALLISNERIA AMER	0.3	0.2										
	3	312786 499972	5.0	NITELLA HYALINA	15.1	4.9	3600	820	0.8	0.5					
			POT. CRISPUS	0.4	0.2										
			POT. NARROW	0.1	0.0										
				VALLISNERIA AMER	1.0	0.8									
		5	1	312802 499982	6.0	NITELLA HYALINA	17.5	5.6	3200	400	1.1	0.5			
					POT. RICHARDSONI	2.6	2.0								
					VALLISNERIA AMER	0.5	0.3								
		2	312802 499982	6.0	CHARA SPP.	12.1	3.5	3200	400	1.1	0.5				
					POT. NARROW	1.1	0.7								
					VALLISNERIA AMER	1.0	0.7								
		3	312802 499982	6.0	NITELLA HYALINA	32.8	13.9	3200	400	1.1	0.5				
					POT. RICHARDSONI	6.9	0.5								

		VALLISNERIA AMER	0.8	0.5			
2	312835 499991	3.5 CHARA SPP.	126.8	44.2	4000	2000	0.4 0.0
3	312835 499991	3.5 NITELLA HYALINA	35.0	13.6	4000	2000	0.4 0.0
		VALLISNERIA AMER	0.2	0.2			
4	312835 499993	6.0 MYRIO. SPICATUM	8.8	6.8	4100	1500	0.4 0.1
		NITELLA HYALINA	1.5	0.7			
		POT. NARROW	0.6	0.4			
		VALLISNERIA AMER	0.6	0.5			
5	312835 499993	6.0 MYRIO. SPICATUM	38.7	26.1	4100	1500	0.4 0.1
		NITELLA HYALINA	119.1	41.9			
		POT. NARROW	0.7	0.4			
		VALLISNERIA AMER	0.6	0.3			
6	312835 499993	6.0 MYRIO. SPICATUM	17.8	13.7	4100	1500	0.4 0.1
		NITELLA HYALINA	110.2	27.1			
7	312836 499998	10.0 NITELLA HYALINA	6.2	2.3	4200	700	1.1 0.4
		POT. NARROW	5.4	3.8			
		VALLISNERIA AMER	3.1	2.3			
8	312836 499998	10.0 NITELLA HYALINA	5.6	1.9	4200	700	1.1 0.4
		POT. CRISPUS	0.9	0.6			
		POT. NARROW	3.4	2.3			
		VALLISNERIA AMER	1.5	1.2			
9	312836 499998	10.0 CHARA SPP.	10.2	4.8	4200	700	1.1 0.4
		POT. RICHARDSONI	5.0	3.6			
		POT. NARROW	3.3	2.1			
10	1	312822 499992	3.0 NITELLA HYALINA	12.2	5.6	3800	1900 0.4 0.1
		POT. GRAMINEUS	3.9	3.2			
		POT. NARROW	4.5	3.3			
2	312822 499992	3.0 CHARA SPP.	22.8	6.7	3800	1900	0.4 0.1
		POT. GRAMINEUS	1.4	1.0			
		POT. NARROW	0.3	0.2			
		VALLISNERIA AMER	0.5	0.3			
3	312822 499992	3.0 NITELLA HYALINA	6.6	2.0	3800	1900	0.4 0.1
		POT. GRAMINEUS	3.0	2.4			
		POT. RICHARDSONI	23.4	2.1			
		POT. NARROW	1.0	0.7			

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
DETROIT	HENNEPIN	1	1	314064	500665	8.5	POT. NARROW	40.7	28.1	4500	810	0.5	0.1
		2	2	314064	500665	8.5	POT. NARROW	38.6	23.3	4500	810	0.5	0.1
		3	3	314064	500665	8.5	POT. NARROW	44.3	29.6	4500	810	0.5	0.1
		2	1	314067	500672	7.0	POT. NARROW	34.8	22.7	4500	500	0.4	0.1
							VALLISNERIA AMER	1.8	1.3				
		2	2	314067	500672	7.0	ELODEA CANADENSIS	0.1	0.0	4500	500	0.4	0.1
							POT. ZOSTERIFORM	2.4	1.3				
							POT. NARROW	41.2	27.4				
							SAGITTARIA SPP.	2.2	1.5				
		3	3	314067	500672	7.0	POT. NARROW	42.9	28.5	4500	500	0.4	0.1
							SAGITTARIA SPP.	7.3	4.9				
		4	4	314059	500677	9.5	POT. RICHARDSONI	43.7	29.6	2600	330	1.3	0.8
							POT. NARROW	TRACE					
							VALLISNERIA AMER	1.8	1.1				
		5	5	314059	500677	9.5	POT. RICHARDSONI	36.0	26.6	2600	330	1.3	0.8
							POT. NARROW	3.4	2.1				
							VALLISNERIA AMER	9.1	6.4				
		6	6	314059	500677	9.5	POT. RICHARDSONI	64.1	45.8	2600	330	1.3	0.8
							POT. NARROW	TRACE					
							VALLISNERIA AMER	6.4	4.6				
		3	1	314075	500683	7.5	POT. ZOSTERIFORM	0.2	0.1	3900	1100	0.2	0.1
							POT. NARROW	25.1	18.1				
							SAGITTARIA SPP.	1.4	0.9				
							VALLISNERIA AMER	2.4	1.8				
		2	2	314075	500683	7.5	POT. NARROW	22.4	15.3	3900	1100	0.2	0.1
							VALLISNERIA AMER	0.3	0.2				
		3	3	314075	500683	7.5	NITELLA HYALINA	1.1	0.3	3900	1100	0.2	0.1
							POT. ZOSTERIFORM	15.8	13.7				
							POT. NARROW	1.1	0.7				
							SAGITTARIA SPP.	8.3	2.8				
		4	1	314089	500694	8.0	NITELLA HYALINA	29.1	7.9	2500	400	0.2	0.0
							POT. ZOSTERIFORM	3.5	2.2				
							POT. NARROW	29.4	19.0				
							VALLISNERIA AMER	7.1	4.8				
		2	2	314089	500694	8.0	CHARA SPP.	2.8	1.0	2500	400	0.2	0.0
							POT. NARROW	26.7	18.4				
							VALLISNERIA AMER	3.7	2.7				
		3	3	314089	500694	8.0	POT. NARROW	45.4	31.1	2500	400	0.2	0.0

SAGITTARIA SPP.									
			6.8	4.9					
5	1	314075 500688	7.0	POT. ZOSTERIFORM	1.6	0.8	4000	1100	0.5 0.2
		POT. NARROW	14.5	9.5					
		SAGITTARIA SPP.	2.7	2.0					
2		314075 500688	7.0	POT. ZOSTERIFORM	6.9	3.6	4000	1100	0.5 0.2
		VALLISNERIA AMER	2.8	2.0					
3		314075 500688	7.0	NITELLA HYALINA	10.4	4.0	4000	1100	0.5 0.2
		POT. NARROW	13.8	6.9					
		VALLISNERIA AMER	1.1	0.7					
4		314066 500688	9.5	POT. RICHARDSONI	22.3	59.8	2400	730	1.3 0.3
5		314066 500688	9.5	POT. RICHARDSONI	29.3	20.7	2400	730	1.3 0.3
		VALLISNERIA AMER	2.6	1.7					
6		314066 500688	9.5	POT. RICHARDSONI	26.7	18.0	2400	730	1.3 0.3
		POT. ZOSTERIFORM	2.1	0.9					
6	1	314080 500694	7.0	NITELLA HYALINA	85.7	18.7	3500	1100	0.5 0.3
		POT. NARROW	13.1	8.4					
2		314080 500694	7.0	NITELLA HYALINA	2.8	1.0	3500	1100	0.5 0.3
		POT. NARROW	4.8	3.6					
3		314080 500694	7.0	NITELLA HYALINA	3.0	0.5	3500	1100	0.5 0.3
		POT. NARROW	2.2	1.6					
7	1	314096 500706	7.5	VALLISNERIA AMER	6.8	5.1	2600	1000	0.3 0.1
2		314096 500706	7.5	POT. ZOSTERIFORM	11.3	0.4	2600	1000	0.3 0.1
		VALLISNERIA AMER	11.1	7.2					
3		314096 500706	7.5	NITELLA HYALINA	6.3	1.8	2600	1000	0.3 0.1
		POT. ZOSTERIFORM	0.6	0.4					
		VALLISNERIA AMER	4.1	3.1					
8	1	314078 500706	6.0	NITELLA HYALINA	0.8	0.4	4100	1000	0.1 0.0
		POT. NARROW	46.1	34.3					
2		314078 500706	6.0	NITELLA HYALINA	4.5	1.6	4100	1000	0.1 0.0
		POT. NARROW	37.5	22.6					
3		314078 500706	6.0	CHARA SPP.	0.9	0.2	4100	1000	0.1 0.0
		POT. NARROW	55.9	30.8					
4		314079 500709	9.0	POT. RICHARDSONI	8.6	6.6	3000	650	0.4 0.2
		POT. ZOSTERIFORM	5.5	2.8					
		VALLISNERIA AMER	2.3	1.3					
5		314079 500709	9.0	POT. RICHARDSONI	2.6	1.6	3000	650	0.4 0.2
		POT. ZOSTERIFORM	1.0	0.1					
		VALLISNERIA AMER	7.5	5.4					
6		314079 500709	9.0	POT. RICHARDSONI	4.8	3.8	3000	650	0.4 0.2
		POT. NARROW	0.4	0.2					
9	1	314092 500710	6.5	NITELLA HYALINA	28.4	8.1	3100	1100	0.1 0.0

	POT.	NARROW	8.8	6.5					
2	314092	500710	6.5	POT. NARROW	17.1	3.6	3100	1100	0.1
				VALLISNERIA AMER	0.8	0.4			0.0
3	314092	500710	6.5	POT. NARROW	19.3	13.3	3100	1100	0.1
10	1	314103	500718	10.0	POT. ZOSTERIFORM	0.5	0.2	3500	530
									0.4
2	314103	500718	10.0	POT. NARROW	1.2	0.6	3500	530	0.4
3	314103	500718	10.0	CHARA SPP.	0.3	0.1	3500	530	0.1
				POT. NARROW	1.1	0.7			
11	1	314088	500718	7.0	POT. RICHARDSONI	9.9	6.5	4000	180
				POT. ZOSTERIFORM	2.7	1.7			0.1
				POT. NARROW	3.9	2.8			
2	314088	500718	7.0	POT. RICHARDSONI	2.5	1.6	4000	180	0.1
				POT. ZOSTERIFORM	1.5	0.9			0.1
				POT. NARROW	14.2	9.2			
				VALLISNERIA AMER	2.4	1.8			
3	314088	500718	7.0	POT. RICHARDSONI	21.1	5.8	4000	180	0.1
				POT. ZOSTERIFORM	1.1	0.6			0.1
				POT. NARROW	45.9	28.5			
				VALLISNERIA AMER	0.1	0.1			
4	314094	500723	7.0	NITELLA HYALINA	75.4	25.1	3200	1000	0.3
				POT. ZOSTERIFORM	3.7	2.5			0.3
				POT. NARROW	6.7	4.2			
				SAGITTARIA SPP.	0.8	0.5			
				VALLISNERIA AMER	6.7	4.6			
5	314094	500723	7.0	NITELLA HYALINA	55.2	23.0	3200	1000	0.3
				POT. NARROW	8.9	5.0			0.3
				VALLISNERIA AMER	6.0	4.5			
6	314094	500723	7.0	NITELLA HYALINA	46.1	17.2	3200	1000	0.3
				POT. NARROW	18.4	12.5			0.3
				VALLISNERIA AMER	7.6	5.7			
12	1	314088	500728	8.0	NITELLA HYALINA	43.8	13.7	3800	350
				POT. ZOSTERIFORM	1.0	0.5			0.1
				POT. NARROW	18.4	11.5			0.1
				VALLISNERIA AMER	0.2	0.2			
2	314088	500728	8.0	NITELLA HYALINA	44.6	13.3	3800	350	0.1
				POT. ZOSTERIFORM	6.6	3.7			0.1
				VALLISNERIA AMER	7.1	5.9			
3	314088	500728	8.0	CHARA SPP.	64.5	15.6	3800	350	0.1
				POT. NARROW	2.9	1.7			0.1
				VALLISNERIA AMER	3.0	2.1			
4	314088	500729	8.5	NITELLA HYALINA	43.6	15.0	2200	360	0.0
				POT. RICHARDSONI	9.9	8.1			0.0
				POT. ZOSTERIFORM	4.1	2.6			0.0
				SAGITTARIA SPP.	7.6	0.6			

5	314098	500729	8.5	CHARA SPP. POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	37.8 21.7 5.0 TRACE	12.7 15.8 3.0	2200	360	0.2	0.0	
6	314098	500729	8.5	NITELLA HYALINA POT. RICHARDSONI POT. ZOSTERIFORM SAGITTARIA SPP. VALLISNERIA AMER	58.4 12.0 1.2 4.3 3.6	22.1 8.7 0.8 3.2 2.7	2200	360	0.2	0.0	
13	1	314100	500735	12.5	VALLISNERIA AMER	6.5	4.6	3500	300	1.5	0.2
2	314100	500735	12.5	POT. NARROW VALLISNERIA AMER	0.2 5.7	0.1 3.7	3500	300	1.5	0.2	
3	314100	500735	12.5	VALLISNERIA AMER	9.5	6.7	3500	300	1.5	0.2	
14	1	314109	500741	9.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	1.3 0.6 4.5	0.5 0.3 2.9	4300	460	0.4	0.2
2	314109	500741	9.0	NITELLA HYALINA POT. ZOSTERIFORM SAGITTARIA SPP.	4.6 1.0 5.5	1.8 0.5 0.3	4300	460	0.4	0.2	
3	314109	500741	9.0	NITELLA HYALINA POT. ZOSTERIFORM VALLISNERIA AMER	1.6 2.1 2.1	0.8 1.3 1.5	4300	460	0.4	0.2	

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT(FOOT CANDLES)	WEIGHT (G/M2)	CURRENT(FT./SEC.)		
								SURFACE	BOTTOM	SURFACE	BOTTOM	
DETROIT	STONY	1	1	314227 500982	8.0	POT. NARROW	0.7	0.4	4000	120	1.5	1.2
					VALLISNERIA AMER	16.1	10.0					
			2	314227 500982	8.0	POT. NARROW	1.2	0.8	4000	120	1.5	1.2
				VALLISNERIA AMER	4.5	3.0						
		3	314227 500982	8.0	POT. NARROW	1.2	0.8	4000	120	1.5	1.2	
				VALLISNERIA AMER	10.6	6.3						
			2	314217 500977	8.0	MYRIO. SPICATUM	0.4	0.2	4100	150	1.1	0.2
				NITELLA HYALINA	3.1	0.7						
				POT. NARROW	1.6	0.7						
				VALLISNERIA AMER	15.4	8.7						
		2	314217 500977	8.0	POT. NARROW	4.0	2.4	4100	150	1.1	0.2	
				VALLISNERIA AMER	5.6	3.7						
			3	314217 500977	8.0	POT. NARROW	3.5	1.8	4100	150	1.1	0.2
				VALLISNERIA AMER	5.0	3.4						
		3	314207 500976	8.0	POT. CRISPUS	0.2	0.1	3700	160	0.6	0.6	
				POT. NARROW	0.2	0.1						
				VALLISNERIA AMER	2.7	1.7						
				2	314207 500976	8.0	POT. CRISPUS	TRACE	3700	160	0.6	0.6
	VALLISNERIA AMER				15.4	11.2						
3	314207 500976				8.0	VALLISNERIA AMER	2.1	1.4	3700	160	0.6	0.6
4	314200 500975			10.0	VALLISNERIA AMER	6.1	4.5	3500	71	0.2	0.0	
	2			314200 500975	10.0	VALLISNERIA AMER	4.2	2.4	3500	71	0.2	0.0
3	314200 500975			10.0	POT. CRISPUS	3.6	2.0	3500	71	0.2	0.0	
	1			314228 500984	8.0	VALLISNERIA AMER	1.5	1.1	4000	180	1.3	0.6
				BUTOMUS UMBELLAT	107.6	54.5						
2	314228 500984			8.0	POT. NARROW	1.6	0.9	4000	180	1.3	0.6	
				VALLISNERIA AMER	16.3	10.2						
				BUTOMUS UMBELLAT	0.9	0.6						
3	314228 500984			8.0	POT. NARROW	3.7	2.4	4000	180	1.3	0.6	
				VALLISNERIA AMER	11.2	7.6						
	6			314224 500988	4.0	ELODEA CANADENS	233.2	159.4	4200	1	0.0	0.0
				MYRIO. SPICATUM	12.6	8.2						
		POT. CRISPUS	7.3	5.1								
2	314224 500988	4.0	ELODEA CANADENS	606.6	487.4	4200	1	0.0	0.0			
		NITELLA HYALINA										
		POT. CRISPUS	12.9	2.5								

3	314224	500988	4.0	ELODEA CANADENS	287.2	208.6	4200	1	0.0	0.0	
4	314221	500985	4.0	ELODEA CANADENS POT. CRISPUS	59.3 119.5	42.8 86.0	3500	1	0.0	0.0	
5	314221	500985	4.0	ELODEA CANADENS POT. CRISPUS	43.7 121.7	30.7 82.8	3500	1	0.0	0.0	
6	314221	500985	4.0	ELODEA CANADENS POT. CRISPUS	13.4 154.8	9.7 116.8	3500	1	0.0	0.0	
7	1	314233	500984	5.5	POT. CRISPUS POT. NARROW	82.6 TRACE	63.6 3500	200	0.9	0.4	
2	314233	500984	5.5	HETERANTHERA DUB POT. CRISPUS VALLISNERIA AMER	6.7 227.7 TRACE	3.9 134.3	3500	200	0.9	0.4	
3	314233	500984	5.5	POT. CRISPUS VALLISNERIA AMER	242.4 TRACE	183.7 3500	200	0.9	0.9	0.4	
8	1	314213	500985	4.0	ELODEA CANADENS POT. CRISPUS	286.6 116.0	221.8 92.3	3800	53	0.0	0.0
2	314213	500985	4.0	ELODEA CANADENS POT. CRISPUS	21.3 227.6	15.9 196.5	3800	53	0.0	0.0	
3	314213	500985	4.0	ELODEA CANADENS MYRIO. SPICATUM POT. CRISPUS	14.0 0.5 298.0	9.8 0.3 201.7	3800	53	0.0	0.0	
9	1	-	-	-	NO PLANTS PRESENT	-	-	-	-	-	
2	-	-	-	-	NO PLANTS PRESENT	-	-	-	-	-	
3	-	-	-	-	NO PLANTS PRESENT	-	-	-	-	-	
10	1	314230	500995	4.0	ELODEA CANADENS HETERANTHERA DUB POT. CRISPUS	1.5 4.5 180.2	0.9 3.0 111.2	3000	4	0.1	0.0
2	314230	500995	4.0	POT. CRISPUS	210.0	115.1	3000	4	0.1	0.0	
3	314230	500995	4.0	ELODEA CANADENS MYRIO. SPICATUM POT. CRISPUS	TRACE TRACE 98.3	3000	3000	4	0.1	0.0	
11	1	-	-	-	NO PLANTS PRESENT	-	-	-	-	-	
2	-	-	-	-	NO PLANTS PRESENT	-	-	-	-	-	
3	-	-	-	-	NO PLANTS PRESENT	-	-	-	-	-	

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	CURRENT (FT./SEC.)
ST. CLAIR STAG										
1		1	309021	497380	12.0	NO PLANTS PRESENT	3500	1500	2.9	2.6
2		2	309021	497380	12.0	NO PLANTS PRESENT	3500	1500	2.9	2.6
3		3	309021	497380	12.0	NO PLANTS PRESENT	3500	1500	2.9	2.6
2		1	309037	497386	12.5	NO PLANTS PRESENT	3100	1100	2.8	2.5
2		2	309037	497386	12.5	NO PLANTS PRESENT	3100	1100	2.8	2.5
3		3	309037	497386	12.5	NO PLANTS PRESENT	3100	1100	2.8	2.5
3		1	309023	497386	11.0	NO PLANTS PRESENT	3300	1200	2.8	2.3
2		2	309023	497386	11.0	NO PLANTS PRESENT	3300	1200	2.8	2.3
3		3	309023	497386	11.0	NO PLANTS PRESENT	3300	1200	2.8	2.3
4		1	309039	497392	12.0	NO PLANTS PRESENT	3100	1100	2.9	2.5
2		2	309039	497392	12.0	NO PLANTS PRESENT	3100	1100	2.9	2.5
3		3	309039	497392	12.0	NO PLANTS PRESENT	3100	1100	2.9	2.5
5		1	309034	497393	9.0	NO PLANTS PRESENT	3500	2100	2.8	2.2
2		2	309034	497393	9.0	NO PLANTS PRESENT	3500	2100	2.8	2.2
3		3	309034	497393	9.0	NO PLANTS PRESENT	3500	2100	2.8	2.2
6		1	309040	497399	4.0	CHARA SPP.	414.2	131.0	1.6	1.2
						POT. GRAMINEUS	17.5	10.6		
						POT. NARROW	34.1	11.8		
2		2	309040	497399	4.0	CHARA SPP.	311.8	74.5	1.6	1.2
						POT. GRAMINEUS	2.6	2.1		
3		3	309040	497399	4.0	CHARA SPP.	314.7	85.6	1.6	1.2
						POT. GRAMINEUS	27.6	19.9		
7		1	309034	497400	6.0	CHARA SPP.	4.8	1.7	0.8	0.1
						ELODEA CANADENS	37.8	20.0		
						MYRIO. SPICATUM	8.5	6.3		
						POT. RICHARDSONI	16.3	11.7		
						POT. NARROW	27.6	18.5		
2		2	309034	497400	6.0	CHARA SPP.	2.1	1.0	0.8	0.1
						ELODEA CANADENS	23.1	16.1		
						MYRIO. SPICATUM	20.7	16.8		
						POT. RICHARDSONI	41.5	32.3		
						POT. NARROW	70.2	56.3		
3		3	309034	497400	6.0	CHARA SPP.	1.5	0.7	0.8	0.1
						ELODEA CANADENS	15.0	10.3		
						MYRIO. SPICATUM	3.6	2.6		
						POT. RICHARDSONI	18.3	9.5		
						POT. NARROW	143.2	113.7		
4		4	309034	497400	5.0	ELODEA CANADENS	0.5	0.4	0.8	0.0
						POT. RICHARDSONI	9.3	7.9		
						POT. NARROW	48.5	40.4		

5	309034	497400	5.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	1.1 110.6 60.2	0.4 84.6 44.8	1000	0.8	0.0	
6	309034	497400	5.0	ELODEA CANADENS POT. RICHARDSONI POT. NARROW	211.5 191.2 104.3	61.7 71.3 76.2	1000	0.8	0.0	
7	309033	497402	3.0	CHARA SPP. POT. NARROW	277.6 1.2	81.2 0.8	2600	1.2	1.0	
8	309033	497402	3.0	CHARA SPP. POT. GRAMINEUS ZANN. PALUSTRIS	94.2 4.2 2.3	24.7 2.6 1.7	2600	1.2	1.0	
9	309033	497402	3.0	CHARA SPP. POT. NARROW	601.4 TRACE	115.3	2600	1.2	1.0	
8	1	309042	497404	5.1	ELODEA CANADENS MYRIO. SPICATUM	5.5 145.2	4.2 115.5	73	0.2	0.1
2	309042	497404	5.1	MYRIO. SPICATUM POT. RICHARDSONI	80.8 21.4	46.5 17.8	73	0.2	0.1	
3	309042	497404	5.1	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	0.5 28.4 91.3 11.6	0.2 17.7 69.3 9.3	73	0.2	0.1	
4	309047	497406	7.1	CHARA SPP. POT. RICHARDSONI POT. NARROW	276.4 5.3 19.0	184.0 4.1 14.5	1800	1.2	0.5	
5	309047	497406	7.1	CHARA SPP. POT. NARROW	0.2 15.0	0.1 12.1	1800	1.2	0.5	
6	309047	497406	7.1	NITELLA HYALINA POT. RICHARDSONI POT. NARROW	0.4 29.9 16.2	0.1 23.5 12.5	1800	1.2	0.5	
9	1	309039	497406	8.6	POT. CRISPUS POT. RICHARDSONI	29.4 9.4	20.8 7.9	750	0.1	0.1
2	309039	497406	8.6	ELODEA CANADENS POT. CRISPUS POT. RICHARDSONI	2.1 62.1 5.4	1.4 55.0 3.9	750	0.1	0.1	
3	309039	497406	8.6	ELODEA CANADENS POT. CRISPUS	12.2 47.8	8.8 40.0	750	0.1	0.1	
4	309036	497405	10.0	ELODEA CANADENS NITELLA HYALINA	180.0 5.4	79.7 2.1	180	0.7	0.1	
5	309036	497405	10.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	9.4 97.0 4.8 27.8	3.9 65.9 3.6 20.6	180	0.7	0.1	
6	309036	497405	10.0	CHARA SPP. ELODEA CANADENS	3.8 232.9	1.5 119.7	180	0.7	0.1	

7	309040	497402	3.0	CHARA SPP.	50.4	19.3	4000	3500	0.1	0.1
8	309040	497402	3.0	CHARA SPP.	145.0	43.3	4000	3500	0.1	0.1
9	309040	497402	3.0	CHARA SPP. ELODEA CANADENS	67.0 1.0	24.8 0.2	4000	3500	0.1	0.1
10	309056	497414	6.5	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI	17.4 17.1 89.8	13.2 3.8 66.2	820	110	1.3	0.0
2	309056	497414	6.5	ELODEA CANADENS POT. RICHARDSONI	50.5 260.2	21.5 119.7	820	110	1.3	0.0
3	309056	497414	6.5	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI POT. NARROW	4.3 39.8 114.1 1.2	1.5 27.8 79.8 0.7	820	110	1.3	0.0
11	309047	497408	5.5	CHARA SPP. ELODEA CANADENS NAJAS FLEXILIS TRACE POT. CRISPUS POT. RICHARDSONI POT. NARROW	0.1 0.5 0.1 66.2 41.4	0.0 0.4 0.1 32.3 33.2	4000	1500	0.8	0.5
2	309047	497408	5.5	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI POT. NARROW	2.3 1.4 59.6 115.4	1.1 0.6 37.9 86.2	4000	1500	0.8	0.5
3	309047	497408	5.5	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI POT. NARROW	1.2 1.8 69.0 32.5	0.5 1.3 54.3 25.8	4000	1500	0.8	0.5
4	309054	497411	7.0	CHARA SPP.	40.5	8.0	1100	530	1.0	0.6
5	309054	497411	7.0	CHARA SPP.	201.2	24.7	1100	530	1.0	0.6
6	309054	497411	7.0	CHARA SPP.	256.9	27.4	1100	530	1.0	0.6
7	309047	497412	6.5	ELODEA CANADENS MYRIO. SPICATUM POT. NARROW	88.1 30.8 89.5	54.8 21.7 68.4	750	320	0.6	0.0
8	309047	497412	6.5	ELODEA CANADENS POT. NARROW	267.2 39.3	137.2 25.8	750	320	0.6	0.0
9	309047	497412	6.5	ELODEA CANADENS MYRIO. SPICATUM POT. NARROW	62.7 0.8 100.6	35.8 0.5 66.6	750	320	0.6	0.0
12	309040	497409	3.0	CHARA SPP.	239.6	46.1	5100	3600	0.2	0.0
2	309040	497409	3.0	CHARA SPP.	213.8	49.3	5100	3600	0.2	0.0
3	309040	497409	3.0	CHARA SPP. VALLISNERIA AMER	120.0 1.4	46.4 1.0	5100	3600	0.2	0.0

4	309044	497411	5.3	ELODEA CANADENS MYRIO. SPICATUM	6.2 72.9	4.1 50.4	570 230	0.2 0.0	
5	309044	497411	5.3	ELODEA CANADENS MYRIO. SPICATUM POT. CRISPUS	23.5 83.7 0.7	14.8 43.9 0.5	570 230	0.2 0.0	
6	309044	497411	5.3	ELODEA CANADENS MYRIO. SPICATUM NITELLA HYALINA TRACE	63.1 7.7	47.6 4.4	570 230	0.2 0.0	
13	1	309058	497413	12.0	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI	2.1 318.8 5.1	1.3 117.5 4.1	750 250	1.0 0.0
2	309058	497413	12.0	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI	96.8 235.7 26.1	66.3 189.7 20.7	750 250	1.0 0.0	
3	309058	497413	12.0	NITELLA HYALINA POT. RICHARDSONI	298.8 34.6	108.1 24.0	750 250	1.0 0.0	
4	309057	497413	11.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	2.3 15.3 11.3	1.6 12.6 9.0	1300 150	1.0 0.1	
5	309057	497413	11.0	POT. RICHARDSONI POT. NARROW	58.2 38.6	37.7 29.2	1300 150	1.0 0.1	
6	309057	497413	11.0	NITELLA HYALINA POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	8.3 25.3 4.9 12.1	5.5 20.3 3.6 8.1	1300 150	1.0 0.1	
14	1	309069	497423	7.1	CHARA SPP.	3.9	1.4	650 430	2.1 1.6
2	309069	497423	7.1	CHARA SPP.	6.7	2.4	650 430	2.1 1.6	
3	309069	497423	7.1	CHARA SPP. POT. NARROW	34.6 3.6	10.3 1.2	650 430	2.1 1.6	
15	1	309075	497427	3.5	POT. NARROW	17.7	12.6	650 420	1.9 1.2
2	309075	497427	3.5	CHARA SPP. POT. NARROW	5.5 4.3	2.0 2.8	650 420	1.9 1.2	
3	309075	497427	3.5	POT. NARROW	16.4	11.5	650 420	1.9 1.2	
4	309074	497432	2.2	CHARA SPP.	198.1	54.4	620 400	1.5 0.8	
5	309074	497432	2.2	CHARA SPP.	281.9	76.2	620 400	1.5 0.8	
6	309074	497432	2.2	CHARA SPP.	314.9	85.4	620 400	1.5 0.8	

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
ST. CLAIR FAWN		1	1	309569	498249	11.5	NITELLA HYALINA	1.1	0.4	1800	650	2.3	1.7
							POT. NARROW	31.5	20.4				
							NITELLA HYALINA	2.3	0.6	1800	650	2.3	1.7
							POT. NARROW	69.2	51.7				
							NITELLA HYALINA	76.3	57.7	1800	650	2.3	1.7
							POT. NARROW						
		2	1	309572	498258	8.4	CHARA SPP.	109.2	27.7	4100	410	1.6	0.4
							POT. GRAMINEUS	15.6	3.4				
							POT. RICHARDSONI	34.5	33.5				
							POT. NARROW	0.8	0.5				
							NITELLA HYALINA	3.8	1.4	4100	410	1.6	0.4
							POT. GRAMINEUS	46.0	37.6				
		3	1	309572	498258	8.4	CHARA SPP.	13.8	4.4	4100	410	1.6	0.4
							POT. GRAMINEUS	14.4	11.5				
		3	1	309582	498256	8.2	MYRIO. EXALBESC	TRACE		2600	520	3.0	2.7
							NITELLA HYALINA	44.0	18.7				
							POT. GRAMINEUS	66.8	53.1				
							POT. RICHARDSONI	5.2	4.2				
							NITELLA HYALINA	54.2	20.5	2600	520	3.0	2.7
							POT. GRAMINEUS	45.8	35.7				
		3	1	309582	498256	8.2	NITELLA HYALINA	51.4	19.5	2600	520	3.0	2.7
							POT. GRAMINEUS	24.2	10.8				
		4	1	309579	498263	3.5	CHARA SPP.	240.3	62.2	4300	3500	1.6	1.2
							POT. GRAMINEUS	22.2	16.8				
							POT. ZOSTERIFORM	50.6	38.7				
							POT. NARROW	42.4	33.8				
							ZANN. PALUSTRIS	1.1	0.4				
		3	1	309579	498263	3.5	CHARA SPP.	590.7	72.0	4300	3500	1.6	1.2
							POT. NARROW	114.2	114.0				
		5	1	309602	498270	3.7	CHARA SPP.	118.4	29.7	1500	1000	1.4	1.0
							NAJAS FLEXILIS	0.4	0.2				
							POT. GRAMINEUS	21.0	14.7				
		2	1	309602	498270	3.7	CHARA SPP.	81.4	25.1	1500	1000	1.4	1.0
							NAJAS FLEXILIS	0.6	0.3				
							POT. GRAMINEUS	23.1	16.4				
		3	1	309602	498270	3.7	CHARA SPP.	77.4	15.4	1500	1000	1.4	1.0

NAJAS FLEXILIS													
POT. GRAMINEUS													
6	1	309593	498265	3.4	CHARA SPP.	176.8	56.9	2500	1300	1.3	1.0		
POT. ZOSTERIFORM													
POT. NARROW													
2													
309593 498265 3.4 CHARA SPP.													
NAJAS FLEXILIS													
POT. NARROW													
3													
309593 498265 3.4 CHARA SPP.													
POT. ZOSTERIFORM													
POT. NARROW													
7													
309584 498270 2.8 CHARA SPP.													
POT. GRAMINEUS													
POT. NARROW													
2													
309584 498270 2.8 CHARA SPP.													
POT. GRAMINEUS													
POT. RICHARDSONI													
POT. NARROW													
3													
309584 498270 2.8 CHARA SPP.													
POT. GRAMINEUS													
POT. RICHARDSONI													
POT. NARROW													
4													
309585 498267 3.0 CHARA SPP.													
POT. GRAMINEUS													
POT. NARROW													
5													
309585 498267 3.0 CHARA SPP.													
POT. GRAMINEUS													
POT. NARROW													
6													
309585 498267 3.0 CHARA SPP.													
POT. GRAMINEUS													
POT. NARROW													
8													
309508 498273 4.1 CHARA SPP.													
POT. GRAMINEUS													
POT. NARROW													
2													
309608 498273 4.1 NITELLA HYALINA													
POT. GRAMINEUS													
POT. NARROW													
3													
309608 498273 4.1 CHARA SPP.													
POT. GRAMINEUS													
VALLISNERIA AMER													
9													
309603 498277 2.0 CHARA SPP.													
POT. GRAMINEUS													
POT. RICHARDSONI													
POT. NARROW													
2													
309603 498277 2.0 CHARA SPP.													
POT. RICHARDSONI													
POT. NARROW													
3													
309603 498277 2.0 CHARA SPP.													
POT. RICHARDSONI													
POT. NARROW													

4	309601	498273	2.5	CHARA SPP.	108.3	36.5	3300	1700	0.8	0.7
5	309601	498273	2.5	CHARA SPP.	40.5	12.3	3300	1700	0.8	0.7
				POT. GRAMINEUS	1.4	0.9				
6	309601	498273	2.5	CHARA SPP.	136.0	42.9	3300	1700	0.8	0.7
10	1	309620	498283	5.0	CHARA SPP.	144.0	38.4	2500	940	0.8
				NAJAS FLEXILIS	0.1	0.1				0.7
				POT. NARROW	TRACE					
2	309620	498283	5.0	CHARA SPP.	96.5	27.0	2500	940	0.8	0.7
				NAJAS FLEXILIS	0.9	0.5				
3	309620	498283	5.0	CHARA SPP.	77.1	20.4	2500	940	0.8	0.7
				NAJAS FLEXILIS	0.8	0.1				
11	1	309620	498284	3.0	CHARA SPP.	533.3	177.8	1500	230	0.5
				POT. ZOSTERIFORM	153.5	109.7				0.1
				POT. NARROW	1.0	0.7				
2	309620	498284	3.0	CHARA SPP.	48.1	14.9	1500	230	0.5	0.1
				NAJAS FLEXILIS	TRACE					
				POT. GRAMINEUS	55.1	36.1				
				POT. RICHARDSONI	34.9	25.9				
				SAGITTARIA SPP.	0.7	0.5				
3	309620	498284	3.0	CHARA SPP.	622.8	201.4	1500	230	0.5	0.1
				POT. RICHARDSONI	160.8	118.9				
				POT. NARROW	37.9	28.6				
4	309616	498280	2.5	CHARA SPP.	129.3	39.5	2400	1400	0.6	0.7
				NAJAS FLEXILIS	0.1	0.1				
5	309616	498280	2.5	CHARA SPP.	58.2	18.3	2400	1400	0.6	0.7
				POT. GRAMINEUS	13.0	2.5				
6	309616	498280	2.5	CHARA SPP.	106.0	35.4	2400	1400	0.6	0.7
				NAJAS FLEXILIS	TRACE					
				POT. NARROW	TRACE					

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES (FT.) UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	CURRENT (FT./SEC.) SURFACE BOTTOM
ST. CLAIR RUSSELL		1	1	309944 498652	10.5	POT. NARROW	32.4		25.5	2.3 1.5
						NITELLOP. ORTUSA	TRACE			
						POT. NARROW	45.6		36.7	2.3 1.5
						NITELLOP. ORTUSA	TRACE			
						POT. RICHARDSONI	20.6		15.5	2.3 1.5
						POT. NARROW	32.8		25.9	
						POT. GRAMINEUS	78.4		59.8	1.5 0.7
						POT. NARROW	2.2		1.8	
						POT. GRAMINEUS	109.5		84.4	1.5 0.7
						POT. NARROW	19.5		15.1	
						NITELLA HYALINA	0.5		0.1	1.5 0.7
						POT. GRAMINEUS	221.2		132.4	
	2	1	309939 498653	9.5	CHARA SPP.	TRACE			650	2.3 0.3
						POT. GRAMINEUS	96.0		70.2	
						POT. NARROW	9.9		7.5	
						POT. GRAMINEUS	118.5		89.6	2.3 0.3
						POT. NARROW	29.3		23.3	
						POT. GRAMINEUS	90.6		72.3	2.3 0.3
						POT. NARROW	37.5		30.7	
						NITELLOP. ORTUSA	TRACE			
						ELODEA CANADENS	3.5		2.4	0.5 0.1
						POT. RICHARDSONI	167.4		129.1	
						ELODEA CANADENS	23.1		15.3	0.5 0.1
						POT. RICHARDSONI	944.8		886.8	
	3	1	309968 498660	8.0	CHARA SPP.	0.2			0.1	0.5 0.1
						POT. RICHARDSONI	651.0		583.3	
						ELODEA CANADENS	8.4		4.1	0.6 0.2
						POT. RICHARDSONI	5.1		3.3	
						POT. RICHARDSONI	118.7		91.2	
						POT. NARROW	29.7		22.7	
						CHARA SPP.	10.7		4.9	0.6 0.2
						ELODEA CANADENS	7.7		4.7	
						MYRIO. SPICATUM	0.4		0.3	
						POT. RICHARDSONI	158.2		124.2	
						POT. NARROW	14.8		11.1	
						ELODEA CANADENS	38.3		26.9	0.6 0.2
	4	1	309962 498658	8.0	CHARA SPP.	TRACE			650	2.3 0.3
						POT. GRAMINEUS	96.0		70.2	
						POT. NARROW	9.9		7.5	
						POT. GRAMINEUS	118.5		89.6	2.3 0.3
						POT. NARROW	29.3		23.3	
						POT. GRAMINEUS	90.6		72.3	2.3 0.3
						POT. NARROW	37.5		30.7	
						NITELLOP. ORTUSA	TRACE			
						ELODEA CANADENS	3.5		2.4	0.5 0.1
						POT. RICHARDSONI	167.4		129.1	
						ELODEA CANADENS	23.1		15.3	0.5 0.1
						POT. RICHARDSONI	944.8		886.8	

=====												
		POT.	NARROW		2.5		1.9					
5	1	309951 498657	8.0	POT. RICHARDSONI	95.1		76.2	550	230	1.6	0.2	
=====												
	2	309951 498657	8.0	CHARA SPP.	TRACE			550	230	1.6	0.2	
=====												
		POT.	RICHARDSONI		54.4		43.5					
=====												
		POT.	NARROW		40.4		32.9					
=====												
	3	309951 498657	8.0	NITELLA HYALINA	1.5		0.5	550	230	1.6	0.2	
=====												
		POT.	RICHARDSONI		139.4		94.5					
=====												
		POT.	NARROW		22.6		17.1					
=====												
6	1	309945 498861	6.0	CHARA SPP.	186.3		132.0	1100	560	1.9	1.2	
=====												
		POT.	GRAMINEUS		0.6		0.4					
=====												
		POT.	NARROW		1.5		1.2					
=====												
	2	309945 498861	6.0	CHARA SPP.	180.3		34.8	1100	560	1.9	1.2	
=====												
	3	309945 498861	6.0	CHARA SPP.	97.7		57.9	1100	560	1.9	1.2	
=====												
		POT.	GRAMINEUS		TRACE							
=====												
		POT.	NARROW		TRACE							
=====												
	4	309945 498658	5.0	CHARA SPP.	17.7		6.1	3600	2200	2.3	1.3	
=====												
		POT.	GRAMINEUS		134.8		109.1					
=====												
	5	309945 498658	5.0	CHARA SPP.	2.1		0.6	3600	2200	2.3	1.3	
=====												
		POT.	GRAMINEUS		134.9		106.7					
=====												
		POT.	NARROW		7.8		6.6					
=====												
	6	309945 498658	5.0	CHARA SPP.	TRACE			3600	2200	2.3	1.3	
=====												
		NITELLA	HYALINA		9.7		2.8					
=====												
		POT.	GRAMINEUS		54.4		39.8					
=====												
7	1	309972 498664	6.0	NITELLA HYALINA	13.7		4.7	3500	1800	1.4	0.6	
=====												
		POT.	GRAMINEUS		111.4		64.8					
=====												
		POT.	RICHARDSONI		67.1		47.9					
=====												
		POT.	NARROW		19.2		15.6					
=====												
	2	309972 498664	6.0	POT. RICHARDSONI	599.5		259.9	3500	1800	1.4	0.6	
=====												
	3	309972 498664	6.0	NITELLA HYALINA	5.3		1.8	3500	1800	1.4	0.6	
=====												
		POT.	GRAMINEUS		122.9		93.0					
=====												
		POT.	RICHARDSONI		50.8		40.3					
=====												
		POT.	NARROW		3.7		2.8					
=====												
	4	309972 498664	3.0	CHARA SPP.	158.2		48.7	1300	1000	1.1	0.7	
=====												
	5	309972 498664	3.0	CHARA SPP.	148.5		52.2	1300	1000	1.1	0.7	
=====												
	6	309972 498664	3.0	CHARA SPP.	118.7		38.4	1300	1000	1.1	0.7	
=====												
8	1	309963 498665	4.5	POT. GRAMINEUS	77.5		57.4	2800	1000	1.6	0.2	
=====												
		POT.	NARROW		62.3		50.0					
=====												
		ZANN.	PALUSTRIS		1.0		0.8					
=====												
	2	309963 498665	4.5	POT. GRAMINEUS	133.2		96.7	2800	1000	1.6	0.2	
=====												
		POT.	NARROW		148.3		118.5					
=====												
	3	309963 498665	4.5	POT. GRAMINEUS	47.4		35.4	2800	1000	1.6	0.2	
=====												

	POT. NARROW NITELLOP. OBTUSA	64.8 TRACE	53.1			
9	1	309956 498665 4.0	CHARA SPP.	162.1	45.5	520 150 0.7 0.1
			POT. GRAMINEUS	97.7	68.3	
			POT. NARROW	21.6	16.5	
			VALLISNERIA AMER	3.0	1.8	
2	2	309956 498665 4.0	CHARA SPP.	208.3	140.3	520 150 0.7 0.1
			NAJAS FLEXILIS	0.6	0.4	
			POT. GRAMINEUS	114.9	81.1	
			POT. RICHARDSONI	19.2	15.7	
3	3	309956 498665 4.0	CHARA SPP.	275.4	190.8	520 150 0.7 0.1
			NAJAS FLEXILIS	0.8	0.4	
			POT. GRAMINEUS	79.0	57.8	
			POT. RICHARDSONI	21.2	17.1	
			POT. NARROW	1.2	0.9	

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	MACROPHYTE TAXON	DEPTH (FT.)	COORDINATES UPPER LOWER	DRY WEIGHT (G/M2)	ASH-FREE LIGHT(FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT(FT./SEC.)
DETROIT	BELLE	1	1	POT. RICHARDSONI	10.5	312758 500952	186.6	118.8	3500	290	1.1	0.3
			2	POT. RICHARDSONI VALLISNERIA AMER	10.5	312758 500952	78.1 1.9	62.2 1.2	3500	290	1.1	0.3
		3	1	POT. RICHARDSONI	10.5	312758 500952	193.4	141.3	3500	290	1.1	0.3
			2	NAJAS FLEXILIS POT. GRAMINEUS VALLISNERIA AMER NITELLOP. OBTUSA	9.0	312760 500953	2.3 2.1 7.8 1.1	1.2 1.0 5.2 0.3	3600	700	0.9	0.7
	5	1	CHARA SPP.	9.0	312760 500953	0.9	0.2	3600	700	0.9	0.7	
		2	NAJAS FLEXILIS POT. RICHARDSONI VALLISNERIA AMER	9.0	312760 500953	0.3 3.0 27.1	0.2 2.1 7.8					
	6	1	CHARA SPP.	9.0	312760 500953	2.4	0.9	3600	700	0.9	0.7	
		2	NAJAS FLEXILIS POT. ZOSTERIFORM VALLISNERIA AMER	9.0	312760 500953	2.0 1.0 26.2	1.1 0.7 17.7					
	2		1	POT. CRISPUS VALLISNERIA AMER	7.5	312769 500961	0.2 47.2	0.2 25.1	3300	470	0.3	0.1
			2	CHARA SPP. POT. CRISPUS VALLISNERIA AMER	7.5	312769 500961	TRACE 5.8 70.6		3300	470	0.3	0.1
	3		1	POT. ZOSTERIFORM POT. NARROW VALLISNERIA AMER NITELLOP. OBTUSA	7.5	312769 500961	3.0 2.1 20.9 1.3	2.1 1.5 14.1 0.5	3300	470	0.3	0.1
			2									
3	1	1	POT. RICHARDSONI	9.0	312781 500969	325.9	216.6	3400	500	0.2	0.1	
		2	POT. CRISPUS POT. RICHARDSONI	9.0	312781 500969	6.2 186.5	5.4 130.0	3400	500	0.2	0.1	
	2	1	POT. RICHARDSONI	9.0	312781 500969	122.5	90.6	3400	500	0.2	0.1	
		2	CHARA SPP. NAJAS FLEXILIS POT. RICHARDSONI POT. ZOSTERIFORM POT. NARROW VALLISNERIA AMER	10.0	312788 500972	0.7 0.2 13.0 0.9 9.5 17.3	0.2 0.1 9.8 0.6 6.9 15.9	3600	660	1.3	0.6	
2	2	1	CHARA SPP. NAJAS FLEXILIS VALLISNERIA AMER	10.0	312788 500972	0.7 0.4 27.3	0.2 0.2 19.2	3600	660	1.3	0.6	
		2										

3	312788	500972	10.0	CHARA SPP. NAJAS FLEXILIS POT. ZOSTERIFORM VALLISNERIA AMER	0.7 0.8 1.9 12.3	0.2 0.3 0.1 5.6	3600 200	660	1.3	0.6	
5	1	312803	500982	6.0	POT. CRISPUS POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER	17.0 72.4 1.6 28.0	9.3 42.8 1.0 14.6	3700 200	0.7	0.1	
2	312803	500982	6.0	POT. RICHARDSONI	175.6	123.1	3700	200	0.7	0.1	
3	312803	500982	6.0	POT. RICHARDSONI VALLISNERIA AMER	129.6 4.2	82.2 2.9	3700	200	0.7	0.1	
4	312803	500981	7.0	POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER	8.8 2.9 98.4	6.0 2.3 96.2	3700	200	0.7	0.1	
5	312803	500981	7.0	CHARA SPP. NAJAS FLEXILIS POT. RICHARDSONI VALLISNERIA AMER	1.2 0.4 5.2 68.3	0.5 0.1 3.6 52.3	3700	200	0.7	0.1	
6	312803	500981	7.0	POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER NITELLOP. OBTUSA	2.4 14.4 24.9 3.9	1.7 10.2 15.8 1.6	3700	200	0.7	0.1	
6	1	312816	500989	9.0	CHARA SPP. VALLISNERIA AMER NITELLOP. OBTUSA	39.0 1.1 1.3	14.5 0.6 0.6	3600	260	1.0	0.9
2	312816	500989	9.0	CHARA SPP. VALLISNERIA AMER	29.6 3.9	14.5 2.8	3600	260	1.0	0.9	
3	312816	500989	9.0	CHARA SPP. NAJAS FLEXILIS POT. NARROW VALLISNERIA AMER	0.7 1.0 1.8 7.1	0.4 0.7 1.2 4.7	3600	260	1.0	0.9	
7	1	312856	500996	9.0	MYRIO. SPICATUM POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER NITELLOP. OBTUSA	125.4 67.6 1.2 11.4 2.8	99.2 49.2 0.8 7.6 1.1	4700 380	0.2	0.0	
2	312856	500996	9.0	MYRIO. SPICATUM POT. CRISPUS POT. ZOSTERIFORM VALLISNERIA AMER	151.1 29.8 3.9 4.8	112.5 23.0 2.9 3.2	4700	380	0.2	0.0	
3	312856	500996	9.0	MYRIO. SPICATUM POT. ZOSTERIFORM VALLISNERIA AMER	207.3 6.4 10.4	146.9 3.4 6.4	4700	380	0.2	0.0	
4	312857	500997	7.0	MYRIO. SPICATUM NAJAS FLEXILIS POT. RICHARDSONI VALLISNERIA AMER	9.5 1.2 7.8 7.0	8.1 0.7 6.0 4.6	4600	390	0.2	0.1	

3	312822 500991	4.0	CHARA SPP.	46.8	16.9	3000	2100	0.3	0.1
			NAJAS FLEXILIS	1.8	1.2				
			POT. CRISPUS	4.5	4.1				
			POT. GRAMINEUS	34.8	18.8				
			POT. RICHARDSONI	225.5	161.0				
			POT. NARROW	7.5	5.5				
			VALLISNERIA AMER	9.7	5.1				
			NITELLOP. OBTUSA	43.0	18.0				

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT(FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT(FT./SEC.) SURFACE BOTTOM
DETROIT	HENNEPIN	1	1	314067 500669	4.8	POT. NARROW	45.1	33.8	1800	45	0.1	0.0
					VALLISNERIA AMER	33.5	21.7					
			2	314067 500669	4.8	POT. NARROW	50.9	39.1	1800	45	0.1	0.0
					VALLISNERIA AMER	25.7	12.3					
			3	314067 500669	4.8	POT. NARROW	27.4	13.5	1800	45	0.1	0.0
					VALLISNERIA AMER	63.0	34.1					
		2	1	314062 500676	4.2	POT. RICHARDSONI	116.4	85.1	1700	6	0.1	0.0
					POT. NARROW	28.4	21.9					
			2	314062 500676	4.2	POT. RICHARDSONI	209.6	150.8	1700	6	0.1	0.0
					POT. NARROW	20.8	15.5					
			3	314062 500676	4.2	POT. RICHARDSONI	363.4	220.3	1700	6	0.1	0.0
					POT. NARROW	65.0	38.5					
	3	4	314065 500667	5.5	POT. RICHARDSONI	TRACE	80.6	3400	48	0.1	0.0	
					POT. NARROW							
			5	314065 500667	5.5	POT. NARROW	118.2	89.5	3400	48	0.1	0.0
					VALLISNERIA AMER	TRACE						
			6	314065 500667	5.5	POT. NARROW	37.2	28.1	3400	48	0.1	0.0
		1	314080 500680	6.1	NITELLA HYALINA	1.5	0.6	1600	150	0.1	0.1	
					POT. NARROW	1.3	0.9					
					VALLISNERIA AMER	26.0	15.7					
			2	314080 500680	6.1	POT. NARROW	1.3	1.2	1600	150	0.1	0.1
					VALLISNERIA AMER	104.7	43.7					
			3	314080 500680	6.1	POT. NARROW	1.9	1.3	1600	150	0.1	0.1
4	314075 500685			VALLISNERIA AMER	109.3	55.0						
		4	314075 500685	3.5	POT. RICHARDSONI	99.2	73.8	980	130	0.2	0.1	
				VALLISNERIA AMER	11.7	7.2						
		5	314075 500685	3.5	POT. RICHARDSONI	105.6	63.2	980	130	0.2	0.1	
				POT. NARROW	45.3	20.0						
				VALLISNERIA AMER	23.3	10.5						
	314075 500685	6	314075 500685	3.5	POT. RICHARDSONI	78.0	47.7	980	130	0.2	0.1	
				POT. NARROW	0.6	0.2						
				VALLISNERIA AMER	10.5	6.4						
		4	314086 500690	3.6	VALLISNERIA AMER	70.3	42.5	850	49	0.2	0.1	
		2	314086 500690	3.6	VALLISNERIA AMER	31.9	18.9	850	49	0.2	0.1	
3	314086 500690	3.6	VALLISNERIA AMER	76.7	34.6	850	49	0.2	0.1			

5	1	314070 500683	4.5	POT. NARROW VALLISNERIA AMER	22.8 100.1	12.7 28.1	1700 44	0.2 0.1	
	2	314070 500683	4.5	POT. NARROW	47.6	19.5	1700 44	0.2 0.1	
	3	314070 500683	4.5	POT. NARROW VALLISNERIA AMER	62.5 52.1	40.1 23.2	1700 44	0.2 0.1	
	4	314068 500686	3.8	POT. GRAMINEUS POT. NARROW	87.9 2.7	41.6 1.1	2800 61	0.3 0.1	
	5	314068 500686	3.8	POT. RICHARDSONI	75.2	45.6	2800 61	0.3 0.1	
	6	314068 500686	3.8	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	92.5 23.2 8.8	55.7 16.3 3.6	2800 61	0.3 0.1	
	6	1	314083 500695	3.8	CHARA SPP. POT. GRAMINEUS VALLISNERIA AMER	42.1 43.6 37.5	6.9 29.2 16.7	1700 29	0.2 0.1
	2	314083 500695	3.8	NITELLA HYALINA POT. RICHARDSONI	13.8 150.9	3.8 74.6	1700 29	0.2 0.1	
	3	314083 500695	3.8	NITELLA HYALINA POT. RICHARDSONI	9.9 57.1	3.4 31.4	1700 29	0.2 0.1	
	7	1	314097 500705	7.3	VALLISNERIA AMER	56.3	31.4	2000 20	0.1 0.1
	2	314097 500705	7.3	VALLISNERIA AMER	27.4	17.1	2000 20	0.1 0.1	
	3	314097 500705	7.3	VALLISNERIA AMER	79.9	49.3	2000 20	0.1 0.1	
	8	1	314077 500701	5.0	POT. GRAMINEUS POT. NARROW VALLISNERIA AMER	60.9 66.6 8.9	44.0 52.8 6.0	1100 230	0.0 0.0
	2	314077 500701	5.0	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	34.1 2.0 3.0	24.7 1.8 2.0	1100 230	0.0 0.0	
	3	314077 500701	5.0	POT. GRAMINEUS POT. NARROW	97.6 12.3	70.3 9.6	1100 230	0.0 0.0	
	9	1	314091 500710	4.9	VALLISNERIA AMER	40.4	16.1	4000 590	0.2 0.0
	2	314091 500710	4.9	CHARA SPP. VALLISNERIA AMER	1.2 17.3	0.3 9.9	4000 590	0.2 0.0	
	3	314091 500710	4.9	CHARA SPP. POT. NARROW VALLISNERIA AMER	3.8 1.6 27.5	1.5 1.0 13.9	4000 590	0.2 0.0	
	10	1	314103 500716	8.5	VALLISNERIA AMER	85.6	30.2	2000 200	0.3 0.2
	2	314103 500716	8.5	VALLISNERIA AMER	61.9	28.9	2000 200	0.3 0.2	
	3	314103 500716	8.5	VALLISNERIA AMER	153.0	53.1	2000 200	0.3 0.2	

11	1	314086	500714	5.1	POT. NARROW VALLISNERIA AMER	46.5 13.1	16.0 8.6	220	0.3	0.1
	2	314086	500714	5.1	NITELLA HYALINA POT. NARROW VALLISNERIA AMER	0.6 0.4 28.3	0.3 0.3 18.8	220	0.3	0.1
	3	314086	500714	5.1	NAJAS FLEXILIS NITELLA HYALINA VALLISNERIA AMER	0.4 2.6 15.2	0.2 1.2 8.2	220	0.3	0.1
	4	314087	500714	4.1	POT. RICHARDSONI VALLISNERIA AMER	47.7 34.9	36.8 25.2	47	0.1	0.1
	5	314087	500714	4.1	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	78.0 5.2 18.5	49.4 3.5 12.4	47	0.1	0.1
	6	314087	500714	4.1	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	62.5 1.6 13.4	36.6 1.1 9.2	47	0.1	0.1
12	1	314098	500718	3.9	NITELLA HYALINA VALLISNERIA AMER	0.7 21.9	0.3 13.6	140	0.2	0.2
	2	314098	500718	3.9	VALLISNERIA AMER	53.7	28.0	140	0.2	0.2
	3	314098	500718	3.9	NITELLA HYALINA VALLISNERIA AMER	TRACE 29.1	2100 15.7	140	0.2	0.2
13	1	314094	500727	6.3	POT. RICHARDSONI	325.0	232.0	2000	0.1	0.0
	2	314094	500727	6.3	POT. RICHARDSONI	99.0	66.8	2000	0.1	0.0
	3	314094	500727	6.3	POT. RICHARDSONI	205.6	138.2	2000	0.1	0.0
14	1	314106	500736	6.4	VALLISNERIA AMER	36.0	21.0	1500	0.1	0.0
	2	314106	500736	6.4	POT. NARROW VALLISNERIA AMER	2.1 34.1	1.5 20.0	80	0.1	0.0
	3	314106	500736	6.4	VALLISNERIA AMER	9.3	6.0	1500	0.1	0.0
	4	314103	500733	8.1	POT. RICHARDSONI	130.7	104.5	760	0.6	0.2
	5	314103	500733	8.1	POT. RICHARDSONI	130.9	96.0	760	0.6	0.2
	6	314103	500733	8.1	POT. RICHARDSONI	78.2	57.6	760	0.6	0.2

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT(FOOT CANDLES)	CURRENT(FT./SEC.)
				UPPER LOWER				WEIGHT (G/M2)	SURFACE BOTTOM SURFACE BOTTOM
DETROIT	STONY	1	1	314233 500982	9.9	VALLISNERIA AMER	58.5	33.6 900	120 1.5 0.1
			2	314233 500982	9.9	VALLISNERIA AMER	35.0	20.5 900	120 1.5 0.1
			3	314233 500982	9.9	VALLISNERIA AMER	60.6	28.7 900	120 1.5 0.1
		2	1	314212 500978	8.1	POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	36.5 5.6 4.0	33.2 1400 4.1 2.7	27 0.9 0.1
			2	314212 500978	8.1	POT. GRAMINEUS VALLISNERIA AMER	74.7 5.7	34.8 1400 3.3	27 0.9 0.1
			3	314212 500978	8.1	MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW VALLISNERIA AMER	1.0 93.1 0.1 15.4	0.7 1400 71.0 0.0 7.6	27 0.9 0.1
	3	1	314200 500976	7.9	POT. RICHARDSONI	246.7	176.7 1700	7 0.5 0.0	
		2	314200 500976	7.9	POT. RICHARDSONI POT. NARROW	220.1 16.3	162.8 1700 15.5	7 0.5 0.0	
		3	314200 500976	7.9	MYRIO. SPICATUM POT. CRISPUS POT. RICHARDSONI	9.2 12.9 114.7	7.2 1700 2.6 74.6	7 0.5 0.0	
		4	314203 500979	8.1	ELODEA CANADENSIS VALLISNERIA AMER	2.2 10.1	1.5 270 5.4	29 0.4 0.1	
		5	314203 500979	8.1	POT. CRISPUS POT. NARROW VALLISNERIA AMER	23.2 6.4 21.7	20.3 270 0.1 12.1	29 0.4 0.1	
		6	314203 500979	8.1	VALLISNERIA AMER	49.4	34.0 270	29 0.4 0.1	
4	1	314187 500974	8.3	POT. NARROW VALLISNERIA AMER	125.2 11.3	94.3 1800 7.6	30 0.5 0.0		
	2	314187 500974	8.3	POT. NARROW VALLISNERIA AMER	149.6 11.6	78.8 1800 6.9	30 0.5 0.0		
	3	314187 500974	8.3	POT. NARROW VALLISNERIA AMER	16.5 11.3	12.3 1800 6.9	30 0.5 0.0		
	5	314228 500984	7.9	POT. NARROW VALLISNERIA AMER	0.7 37.5	0.3 4500 20.6	410 0.9 0.0		
	2	314228 500984	7.9	POT. ZOSTERIFORM VALLISNERIA AMER	TRACE 120.6	4500 410	0.9 0.0		
	3	314228 500984	7.9	POT. NARROW	TRACE	4500 410	0.9 0.0		

		VALLISNERIA AMER		15.7	9.8		
6	1	314224 500987 1.8	ELODEA CANADENS	524.6	285.9	-	0.1 0.0
			MYRIO. SPICATUM	110.8	59.8		
2	314224 500987 1.8	ELODEA CANADENS	210.6	148.7	-	-	0.1 0.0
		MYRIO. SPICATUM	90.2	65.4			
		POT. CRISPUS	8.9	7.6			
3	314224 500987 1.8	ELODEA CANADENS	447.6	250.1	-	-	0.1 0.0
		MYRIO. SPICATUM	97.6	56.8			
7	1	314237 500992 4.0	MYRIO. SPICATUM	1.3	1.0	3700 130	1.2 0.0
		POT. CRISPUS	61.4	56.7			
		POT. CRISPUS	1.8	1.1			
		VALLISNERIA AMER	101.7	67.1			
		BUTOMUS UMBELLAT	6.0	4.1			
2	314237 500992 4.0	MYRIO. SPICATUM	25.2	11.4	3700 130	1.2 0.0	
		POT. CRISPUS	204.4	144.3			
		POT. CRISPUS	14.4	7.9			
		VALLISNERIA AMER	298.4	113.2			
3	314237 500992 4.0	MYRIO. SPICATUM	137.0	70.2	3700 130	1.2 0.0	
		POT. CRISPUS	0.9	4.4			
		VALLISNERIA AMER	265.2	104.8			
		BUTOMUS UMBELLAT	2.3	1.3			
8	1	314227 500994 2.8	HETERANTHERA DUB	188.5	115.5	3000 510	0.4 0.0
		POT. CRISPUS	13.7	10.9			
2	314227 500994 2.8	ELODEA CANADENS	2.3	0.1	3000 510	0.4 0.0	
		HETERANTHERA DUB	50.8	36.0			
		POT. CRISPUS	23.0	16.8			
3	314227 500994 2.8	HETERANTHERA DUB	306.1	153.6	3000 510	0.4 0.0	
9	1	314247 500999 4.1	HETERANTHERA DUB	0.6	0.4	3500 270	1.3 0.5
		MYRIO. SPICATUM	157.3	127.4			
2	314247 500999 4.1	MYRIO. SPICATUM	98.6	78.5	3500 270	1.3 0.5	
3	314247 500999 4.1	MYRIO. SPICATUM	171.1	102.3	3500 270	1.3 0.5	
10	1	314238 500998 2.0	HETERANTHERA DUB	174.7	77.4	1400 81	0.2 0.1
2	314238 500998 2.0	ELODEA CANADENS	7.8	4.9	1400 81	0.2 0.1	
		HETERANTHERA DUB	19.8	11.0			
3	314238 500998 2.0	ELODEA CANADENS	0.2	0.1	1400 81	0.2 0.1	
		HETERANTHERA DUB	125.0	55.1			
		POT. CRISPUS	2.0	1.5			

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.) SURFACE BOTTOM
ST. CLAIR STAG	1	1	1	309027 497379	12.0	NO PLANTS PRESENT				3800	1300	2.9 2.4
		2	2	309027 497379	12.0	NO PLANTS PRESENT				3800	1300	2.9 2.4
		3	3	309027 497379	12.0	NO PLANTS PRESENT				3800	1300	2.9 2.4
	2	1	1	309038 497383	12.5	NO PLANTS PRESENT				4500	1100	2.6 2.0
		2	2	309038 497383	12.5	NO PLANTS PRESENT				4500	1100	2.6 2.0
		3	3	309038 497383	12.5	NO PLANTS PRESENT				4500	1100	2.6 2.0
	3	1	1	309026 497384	11.5	NO PLANTS PRESENT				3000	1200	2.5 2.0
		2	2	309026 497384	11.5	NO PLANTS PRESENT				3000	1200	2.5 2.0
		3	3	309026 497384	11.5	NO PLANTS PRESENT				3000	1200	2.5 2.0
	4	1	1	309040 497391	12.0	NO PLANTS PRESENT				3800	1200	2.4 2.0
		2	2	309040 497391	12.0	NO PLANTS PRESENT				3800	1200	2.4 2.0
		3	3	309040 497391	12.0	NO PLANTS PRESENT				3800	1200	2.4 2.0
	5	1	1	309034 497394	9.5	CHARA SPP. POT. NARROW	1.7 35.2	0.5 30.4		180	140	1.7 1.0
		2	2	309034 497394	9.5	CHARA SPP. POT. NARROW	1.2 7.8	0.4 5.6		180	140	1.7 1.0
		3	3	309034 497394	9.5	POT. NARROW	18.8	13.7		180	140	1.7 1.0
	6	1	1	309041 497398	7.0	CHARA SPP. POT. GRAMINEUS	48.0 79.3	15.5 58.3		2700	240	1.2 0.4
		2	2	309041 497398	7.0	CHARA SPP. POT. GRAMINEUS	244.1 74.6	74.9 52.5		2700	240	1.2 0.4
		3	3	309041 497398	7.0	POT. NARROW	3.0	2.3				
	7	1	1	309038 497396	7.0	CHARA SPP. POT. GRAMINEUS	1.7 163.4	0.6 117.6		2700	240	1.2 0.4
		2	2	309038 497396	7.0	CHARA SPP. POT. GRAMINEUS	43.7 122.0	14.2 80.1		3500	0	1.4 0.2
		3	3	309038 497396	7.0	POT. NARROW	10.6	8.1				
	8	1	1	309038 497396	7.0	CHARA SPP. POT. GRAMINEUS	124.5 145.4	41.4 101.9		3500	0	1.4 0.2
		2	2	309038 497396	7.0	POT. NARROW	32.9	26.3				
		3	3	309038 497396	7.0	CHARA SPP. POT. GRAMINEUS	9.4 158.4	3.0 105.3		3500	0	1.4 0.2
	9	1	1	309033 497391	4.0	POT. RICHARDSONI POT. NARROW	5.2 26.0	4.1 20.5				
		2	2	309033 497391	4.0	CHARA SPP. POT. GRAMINEUS	182.0 32.3	53.8 24.3		3200	1900	1.9 1.5
		3	3	309033 497391	4.0	CHARA SPP. POT. GRAMINEUS	170.1 31.4	64.9 6.4		3200	1900	1.9 1.5

6	309033	497391	4.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	103.9 60.0 1.4	46.1 42.7 1.1	1900	1.9	1.5		
8	1	309048	497406	12.0	POT. RICHARDSONI POT. NARROW	108.7 67.2	81.6 53.3	29	0.6	0.2	
2	309048	497406	12.0	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI POT. NARROW	0.5 1.6 42.7 43.6	0.3 0.6 32.8 33.6	29	0.6	0.2		
3	309048	497406	12.0	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI POT. NARROW	60.0 4.4 60.1 35.1	51.0 1.5 45.3 26.5	29	0.6	0.2		
4	309045	497405	9.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. NARROW	TRACE 64.3 30.0 162.1	46.2 24.2 131.0	4500	0	0.6	0.1	
5	309045	497405	9.0	CHARA SPP. ELODEA CANADENS POT. RICHARDSONI	3.2 173.7 13.5	1.3 118.2 9.7	4500	0	0.6	0.1	
6	309045	497405	9.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. NARROW	TRACE 38.0 TRACE 57.9	27.1 46.4	4500	0	0.6	0.1	
9	1	309039	497397	10.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	3.1 1.0 55.3 66.4	1.3 0.7 43.1 54.6	3700	0	0.3	0.1
2	309039	497397	10.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	0.5 39.3 46.5	0.3 32.2 37.2	3700	0	0.3	0.1	
3	309039	497397	10.0	MYRIO. SPICATUM POT. RICHARDSONI	60.0 76.8	47.5 59.3	3700	0	0.3	0.1	
4	309035	497396	9.0	CHARA SPP. ELODEA CANADENS MYRIO. SPICATUM	TRACE 10.6 212.7	7.9 153.6	3700	2	0.2	0.1	
5	309035	497396	9.0	ELODEA CANADENS MYRIO. SPICATUM	7.5 70.6	5.3 56.7	3700	2	0.2	0.1	
6	309035	497396	9.0	ELODEA CANADENS MYRIO. SPICATUM POT. CRISPUS	1.5 140.5 TRACE	1.0 104.3	3700	2	0.2	0.1	
7	309036	497405	3.0	CHARA SPP.	111.4	38.4	190	140	0.5	0.4	
8	309036	497405	3.0	CHARA SPP.	120.1	41.7	190	140	0.5	0.4	
9	309036	497405	3.0	CHARA SPP.	144.8	45.0	190	140	0.5	0.4	

10	1	309058	497410	12.0	ELODEA CANADENS	20.0	14.5	5100	500	0.9	0.2
					NITELLA HYALINA	TRACE					
					POT. RICHARDSONI	1.7	1.3				
					POT. NARROW	41.7	33.1				
					VALLISNERIA AMER	TRACE					
2	309058	497410	12.0	ELODEA CANADENS	14.4	10.1	5100	500	0.9	0.2	
					NITELLA HYALINA	0.5	0.3				
					POT. RICHARDSONI	8.6	5.8				
					POT. NARROW	156.3	119.7				
3	309058	497410	12.0	ELODEA CANADENS	5.9	4.5	5100	500	0.9	0.2	
					MYRIO. SPICATUM	3.5	2.8				
					NITELLA HYALINA	4.1	2.6				
					POT. RICHARDSONI	6.6	5.2				
					POT. NARROW	106.2	85.4				
					VALLISNERIA AMER	TRACE					
11	1	309055	497413	12.0	CHARA SPP.	2.0	1.2	160	140	0.9	0.1
					POT. RICHARDSONI	3.5	2.7				
					POT. NARROW	33.1	26.7				
2	309055	497413	12.0	POT. NARROW	198.4	154.7	160	140	0.9	0.1	
3	309055	497413	12.0	ELODEA CANADENS	3.4	2.1	160	140	0.9	0.1	
					NITELLA HYALINA	0.1	0.0				
					POT. RICHARDSONI	0.7	0.5				
					POT. NARROW	148.5	117.5				
4	309047	497407	8.0	CHARA SPP.	TRACE		4600	2800	1.1	0.5	
					ELODEA CANADENS	TRACE					
					POT. GRAMINEUS	29.3	20.3				
					POT. RICHARDSONI	182.6	83.2				
					POT. NARROW	TRACE					
5	309047	497407	8.0	CHARA SPP.	10.2	4.9	4600	2800	1.1	0.5	
					ELODEA CANADENS	1.2	0.7				
					MYRIO. SPICATUM	TRACE					
					POT. GRAMINEUS	79.3	61.5				
					POT. RICHARDSONI	1.2	0.9				
					POT. NARROW	51.9	40.6				
6	309047	497407	8.0	CHARA SPP.	TRACE		4600	2800	1.1	0.5	
					ELODEA CANADENS	2.0	1.3				
					MYRIO. SPICATUM	33.3	25.8				
					POT. GRAMINEUS	85.0	59.4				
					POT. NARROW	19.5	15.3				
7	309053	497410	7.0	CHARA SPP.	98.8	34.5	330	140	0.2	0.2	
8	309053	497410	7.0	CHARA SPP.	65.7	22.3	330	140	0.2	0.2	
9	309053	497410	7.0	CHARA SPP.	63.7	25.4	330	140	0.2	0.2	
12	1	309042	497412	9.0	ELODEA CANADENS	64.8	52.1	4000	3100	0.2	0.1
					MYRIO. SPICATUM	22.9	15.6				
					POT. CRISPUS	9.8	7.6				
					POT. RICHARDSONI	12.1	12.1				
					POT. ZOSTERIFORM	19.6	16.5				

2	309042	497412	9.0	ELODEA CANADENS MYRIO. SPICATUM POT. ZOSTERIFORM	60.7 37.7 0.8	47.0 27.9 0.6	3100	0.2	0.1	
3	309042	497412	9.0	POT. RICHARDSONI VALLISNERIA AMER	19.1 11.4	15.5 7.7	3100	0.2	0.1	
4	309041	497411	9.5	ELODEA CANADENS NITELLA HYALINA POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER	10.2 9.5 18.1 0.7 0.8	7.3 3.0 12.0 0.6 0.4	3100	0.2	0.1	
5	309041	497411	9.5	ELODEA CANADENS POT. CRISPUS POT. RICHARDSONI POT. ZOSTERIFORM	10.3 0.9 54.7 30.0	7.7 0.7 44.7 24.7	3100	0.2	0.1	
6	309041	497411	9.5	ELODEA CANADENS POT. RICHARDSONI POT. ZOSTERIFORM VALLISNERIA AMER	41.3 58.5 16.3 7.1	32.8 47.3 12.7 4.3	3100	0.2	0.1	
7	309042	497411	4.0	CHARA SPP. VALLISNERIA AMER	276.4 4.2	99.4 2.8	100	0.2	0.1	
8	309042	497411	4.0	CHARA SPP. VALLISNERIA AMER	261.9 TRACE	86.5	100	0.2	0.1	
9	309042	497411	4.0	CHARA SPP.	251.1	90.9	100	0.2	0.1	
13	1	309058	497414	12.0	ELODEA CANADENS MYRIO. SPICATUM POT. CRISPUS POT. RICHARDSONI	21.1 3.5 22.8 34.2	18.1 2.3 20.4 15.3	33	0.1	0.0
2	309058	497414	12.0	MYRIO. SPICATUM POT. RICHARDSONI	23.8 48.8	9.3 36.6	33	0.1	0.0	
3	309058	497414	12.0	ELODEA CANADENS MYRIO. SPICATUM POT. RICHARDSONI	0.6 14.7 14.7	0.5 10.6 11.8	33	0.1	0.0	
14	1	309070	497423	6.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	3.1 90.2 36.7	1.1 71.0 28.8	2700	2.3	1.9
2	309070	497423	6.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	0.3 28.2 6.1	0.1 18.2 3.3	2700	2.3	1.9	
3	309070	497423	6.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	TRACE 78.6 8.1	52.8 6.4	2700	2.3	1.9	
15	1	309073	497433	5.0	POT. NARROW	33.7	19.3	3100	0.5	0.5
2	309073	497433	5.0	CHARA SPP. POT. NARROW	TRACE 125.8	87.7	3100	0.5	0.5	

3	309073	497433	5.0	POT. GRAMINEUS	4.8	2.9	3700	3100	0.5	0.5
				POT. NARROW	47.6	27.3				
4	309074	497429	2.5	CHARA SPP.	140.5	54.6	350	240	0.7	0.4
				POT. NARROW	6.6	5.2				
5	309074	497429	2.5	CHARA SPP.	119.8	36.1	350	240	0.7	0.4
				POT. GRAMINEUS	0.6	0.5				
6	309074	497429	2.5	CHARA SPP.	157.2	56.2	350	240	0.7	0.4
				POT. NARROW	14.8	11.7				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)																																							
ST. CLAIR FAWN																																																
1			1	309568 498250	10.0	POT. GRAMINEUS	86.4	65.8 550	24 2.6 0.3																																							
						POT. GRAMINEUS	76.8	60.3 550	24 2.6 0.3																																							
						POT. GRAMINEUS	93.5	73.4 550	24 2.6 0.3																																							
						POT. NARROW	5.6	4.4																																								
						2		1	309580 498256	9.5	CHARA SPP.	0.3	0.1 850	3 0.5 0.0																																		
											ELODEA CANADENS	3.9	2.9																																			
											POT. GRAMINEUS	144.5	105.1																																			
											POT. NARROW	18.0	14.1																																			
											2		2	309580 498256	9.5	NITELLA HYALINA	3.0	1.6 850	3 0.5 0.0																													
																POT. RICHARDSONI	123.5	90.7																														
																POT. NARROW	9.5	7.7																														
																3		3	309580 498256	9.5	ELODEA CANADENS	0.8	0.6 850	3 0.5 0.0																								
																					NITELLA HYALINA	5.5	2.5																									
																					POT. RICHARDSONI	199.9	135.3																									
																					4		4	309581 498255	7.0	CHARA SPP.	362.5	97.3 1400	410 1.7 0.9																			
																										POT. GRAMINEUS	14.4	10.6																				
																										5		5	309581 498255	7.0	CHARA SPP.	94.1	29.2 1400	410 1.7 0.9														
																															POT. GRAMINEUS	6.0	4.6															
6		6	309581 498255	7.0	CHARA SPP.																										219.2	48.2 1400	410 1.7 0.9															
					POT. GRAMINEUS																										4.0	2.9																
					3																											1	309590 498263	10.0	NITELLA HYALINA	1.8	0.8 1700	13 0.3 0.0										
																																			POT. RICHARDSONI	70.3	45.4											
						POT. NARROW	0.2	0.1																																								
						2		2	309590 498263	10.0																									CHARA SPP.	1.3	0.5 1700	13 0.3 0.0										
																																			POT. RICHARDSONI	135.9	99.1											
																																			POT. NARROW	2.3	1.7											
											NITELLOP. OBTUSA	13.5	5.1																																			
											3		3	309590 498263	10.0																				POT. RICHARDSONI	54.6	39.1 1700	13 0.3 0.0										
																																			NITELLOP. OBTUSA	9.4	3.9											
																4		4	309579 498261	5.0															CHARA SPP.	265.0	59.9 1500	440 1.6 1.4										
																																			5		5	309579 498261	5.0	CHARA SPP.	224.3	65.9 1500	440 1.6 1.4					
																																								6		6	309579 498261	5.0	CHARA SPP.	211.4	65.1 1500	440 1.6 1.4
																					4		1	309578 498261	4.5																				CHARA SPP.	159.1	33.6 1500	840 1.2 0.9
																																													POT. NARROW	3.4	2.4	
																										2		2	309578 498261	4.5															CHARA SPP.	282.7	58.1 1500	840 1.2 0.9

3	309578	498261	4.5	CHARA SPP.	170.1	34.9	1500	840	1.2	0.9	
5	1	309601	498269	5.5	CHARA SPP.	556.9	289.0	1100	400	1.4	0.2
				NAJAS FLEXILIS	23.5	14.4					
				POT. GRAMINEUS	49.5	31.0					
				VALLISNERIA AMER	7.4	3.6					
2	309601	498269	5.5	CHARA SPP.	327.8	104.3	1100	400	1.4	0.2	
				NAJAS FLEXILIS	0.7	0.4					
				POT. GRAMINEUS	34.7	21.9					
				VALLISNERIA AMER	5.2	3.8					
3	309601	498269	5.5	CHARA SPP.	350.3	134.6	1100	400	1.4	0.2	
				NAJAS FLEXILIS	9.0	5.3					
				POT. GRAMINEUS	26.0	18.1					
				POT. NARROW	0.6	0.4					
				VALLISNERIA AMER	2.6	1.8					
6	1	309594	498269	4.0	CHARA SPP.	251.3	49.9	2400	2200	0.9	0.9
				POT. GRAMINEUS	0.4	0.3					
2	309594	498269	4.0	CHARA SPP.	460.8	124.2	2400	2200	0.9	0.9	
				NAJAS FLEXILIS	1.8	1.1					
				POT. GRAMINEUS	1.2	0.6					
				POT. NARROW	2.9	2.3					
3	309594	498269	4.0	CHARA SPP.	58.5	17.6	2400	2200	0.9	0.9	
				POT. GRAMINEUS	TRACE						
7	1	309585	498267	3.0	CHARA SPP.	29.9	9.8	820	71	0.2	0.1
				NAJAS FLEXILIS	0.4	0.2					
				POT. GRAMINEUS	76.3	58.7					
				POT. RICHARDSONI	12.6	10.4					
				POT. NARROW	37.8	30.2					
2	309585	498267	3.0	CHARA SPP.	0.4	0.1	820	71	0.2	0.1	
				POT. GRAMINEUS	76.1	51.5					
				POT. RICHARDSONI	12.9	10.2					
				POT. NARROW	34.3	27.6					
3	309585	498267	3.0	CHARA SPP.	4.1	1.3	820	71	0.2	0.1	
				POT. GRAMINEUS	133.2	106.3					
				POT. RICHARDSONI	3.5	3.0					
				POT. NARROW	13.6	10.4					
8	1	309607	498273	5.0	CHARA SPP.	0.3	0.1	1100	16	0.2	0.1
				POT. GRAMINEUS	59.4	24.8					
				POT. NARROW	4.4	3.4					
2	309607	498273	5.0	POT. GRAMINEUS	94.1	73.6	1100	16	0.2	0.1	
3	309607	498273	5.0	CHARA SPP.	10.7	3.5	1100	16	0.2	0.1	
				ELODEA CANADENS	0.3	0.2					
				POT. GRAMINEUS	79.1	55.3					
				POT. RICHARDSONI	91.0	72.0					
				POT. NARROW	15.5	12.2					
4	309608	498276	3.5	CHARA SPP.	293.7	87.4	4100	1100	1.0	0.5	
				NAJAS FLEXILIS	0.3	0.2					
				POT. GRAMINEUS	10.2	5.8					

				POT.	NARROW		0.3	0.2					
5	309608	498276	3.5	CHARA SPP.		146.7	46.2	4100	1100	1.0	0.5		
				POT. GRAMINEUS		4.8	3.6						
				POT. NARROW		1.5	1.1						
6	309608	498276	3.5	CHARA SPP.		393.0	135.5	4100	1100	1.0	0.5		
				NAJAS FLEXILIS		0.4	0.2						
				POT. GRAMINEUS		8.5	5.6						
9	309592	498273	3.0	CHARA SPP.		167.6	56.1	3200	2600	0.5	0.4		
				NAJAS FLEXILIS		8.8	6.0						
				POT. GRAMINEUS		19.3	13.6						
2	309592	498273	3.0	CHARA SPP.		359.5	115.9	3200	2600	0.5	0.4		
				NAJAS FLEXILIS		4.9	3.4						
				POT. GRAMINEUS		19.1	13.4						
3	309592	498273	3.0	CHARA SPP.		231.4	70.7	3200	2600	0.5	0.4		
				NAJAS FLEXILIS		1.8	1.0						
				POT. GRAMINEUS		9.0	6.3						
				POT. ZOSTERIFORM		0.3	0.2						
10	309619	498280	5.0	POT. RICHARDSONI		112.4	76.8	1800	16	0.3	0.1		
				POT. NARROW		15.8	13.3						
2	309619	498280	5.0	CHARA SPP.		77.8	22.8	1800	16	0.3	0.1		
				POT. GRAMINEUS		70.9	56.0						
				POT. RICHARDSONI		12.2	9.8						
				VALLISNERIA AMER		3.4	2.5						
3	309619	498280	5.0	POT. GRAMINEUS		71.0	45.0	1800	16	0.3	0.1		
				POT. RICHARDSONI		123.9	86.0						
				POT. NARROW		50.2	41.8						
11	309614	498280	3.5	CHARA SPP.		111.8	39.5	4200	1100	0.4	0.4		
				NAJAS FLEXILIS		TRACE							
				POT. GRAMINEUS		26.6	19.4						
				POT. RICHARDSONI		4.1	3.5						
				POT. NARROW		1.6	1.4						
				VALLISNERIA AMER		38.0	21.8						
2	309614	498280	3.5	CHARA SPP.		148.7	52.3	4200	1100	0.4	0.4		
				POT. GRAMINEUS		26.5	17.7						
				VALLISNERIA AMER		7.2	3.8						
3	309614	498280	3.5	CHARA SPP.		114.3	37.2	4200	1100	0.4	0.4		
				POT. GRAMINEUS		31.8	20.8						
				POT. RICHARDSONI		3.8	3.2						
				POT. NARROW		8.8	7.3						
				VALLISNERIA AMER		18.2	12.4						

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT(FOOT CANDLES)	CURRENT(FT./SEC.)				
							WEIGHT (G/M2)	SURFACE BOTTOM	SURFACE BOTTOM				
ST. CLAIR RUSSELL	1	1	309952	498653	11.0	CHARA SPP.	42.5	17.2	530 6 2.0 1.4				
						POT. ZOSTERIFORM	1.3	0.9					
						POT. NARROW	106.6	84.1					
						2	309952	498653	11.0	POT. NARROW	109.1	88.2	530 6 2.0 1.4
		3	309952	498653	11.0	POT. NARROW	87.9	68.8	530 6 2.0 1.4				
		2	309943	498653	9.0	CHARA SPP.	553.0	381.4	260 16 1.3 0.2				
						POT. GRAMINEUS	217.3	169.6					
						2	309943	498653	9.0	CHARA SPP.	220.3	63.2	260 16 1.3 0.2
	POT. GRAMINEUS									100.0	66.2		
	POT. NARROW									56.0	44.1		
	3					309943	498653	9.0	POT. GRAMINEUS	216.1	170.9	260 16 1.3 0.2	
		POT. NARROW	5.5	4.3									
	3	1	309968	498658	8.0	ELODEA CANADENS	28.6	15.2	1500 20 0.5 0.2				
						POT. RICHARDSONI	643.4	532.9					
						2	309968	498658	8.0	CHARA SPP.	2.9	1.2	1500 20 0.5 0.2
										POT. RICHARDSONI	324.5	268.0	
										POT. NARROW	10.4	8.2	
						3	309968	498658	8.0	CHARA SPP.	0.3	0.1	1500 20 0.5 0.2
		ELODEA CANADENS	1.0	0.6									
POT. RICHARDSONI		189.8	148.6										
4		309968	498662	7.0	POT. NARROW	12.5	9.9						
					4	309968	498662	7.0	CHARA SPP.	29.5	14.5	1200 55 0.7 0.1	
	ELODEA CANADENS								5.6	4.2			
	POT. GRAMINEUS								68.5	47.7			
	5	309968	498662	7.0	POT. NARROW	16.6	13.7						
					VALLISNERIA AMER	4.0	2.8						
	5	309968	498662	7.0	CHARA SPP.	139.3	40.4	1200 55 0.7 0.1					
					POT. GRAMINEUS	294.3	217.0						
					POT. NARROW	40.2	31.9						
VALLISNERIA AMER					2.2	1.4							
6	309968	498662	7.0	CHARA SPP.	181.6	50.7	1200 55 0.7 0.1						
				POT. GRAMINEUS	165.0	106.2							
				POT. NARROW	14.0	10.9							
				VALLISNERIA AMER	1.9	1.0							
4	309956	498654	9.0	CHARA SPP.	0.5	0.2	1800 4 0.4 0.1						
				ELODEA CANADENS	0.5	0.4							
				POT. RICHARDSONI	320.3	276.9							
				POT. NARROW	19.1	15.7							

3	309956	498654	9.0	ELODEA CANADENS POT. RICHARDSONI POT. NARROW	5.9 70.7 54.8	3.8 52.7 46.0	4	0.4	0.1

5	1	309953	498656	7.0	MYRIO. SPICATUM POT. RICHARDSONI POT. NARROW	8.4 262.6 64.7	6.6 176.5 51.3	3	0.2
2	309953	498656	7.0	CHARA SPP. POT. RICHARDSONI POT. NARROW	0.9 73.1 52.9	0.3 53.2 41.5	3	0.2	0.1

3	309953	498656	7.0	TRACE POT. RICHARDSONI POT. NARROW	142.3 46.6	97.9 35.7	3	0.2	0.1

6	1	309945	498655	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	3.1 381.7 87.5	1.0 317.2 70.9	10	0.9
2	309945	498655	7.0	POT. GRAMINEUS POT. NARROW	167.5 95.6	120.9 73.2	10	0.9	0.2

3	309945	498655	7.0	POT. GRAMINEUS POT. NARROW	163.0 42.5	124.5 34.5	10	0.9	0.2

7	1	309967	498663	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	23.3 165.0 60.2	7.0 123.7 49.4	36	0.8
2	309967	498663	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	53.0 194.6 62.1	15.7 137.5 50.7	36	0.8	0.1

3	309967	498663	7.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	359.2 131.6 71.8	230.9 96.7 58.1	36	0.8	0.1

8	1	309962	498664	4.0	ELODEA CANADENS POT. GRAMINEUS POT. NARROW	0.9 195.8 173.1	0.7 152.0 145.6	1100	0.7
2	309962	498664	4.0	ELODEA CANADENS POT. GRAMINEUS POT. NARROW	3.7 283.3 376.1	2.7 253.1 344.5	1100	0.7	0.2

3	309962	498664	4.0	POT. GRAMINEUS POT. NARROW	162.3 216.5	115.0 175.6	1100	0.7	0.2

4	309965	498662	4.0	CHARA SPP. POT. GRAMINEUS	630.7 32.1	315.6 23.7	1200	0.8	0.2

5	309965	498662	4.0	CHARA SPP. NAJAS FLEXILIS POT. GRAMINEUS	305.7 0.7 14.6	96.1 0.4 10.1	1200	0.8	0.2

6	309965	498662	4.0	CHARA SPP. NAJAS FLEXILIS	468.5 0.5	163.5 0.3	1200	0.8	0.2

		POT.	NARROW		0.9	0.5					
9	1	309356	498663	5.0	CHARA SPP.	48.7	15.5	2400	1000	1.2	0.6
					POT. GRAMINEUS	227.9	155.6				
					POT. NARROW	102.3	84.8				

2	309356	498663	5.0	CHARA SPP.	77.4	26.2	2400	1000	1.2	0.6	
					POT. GRAMINEUS	559.0	512.4				
					POT. NARROW	67.1	55.5				

3	309356	498663	5.0	POT. GRAMINEUS	159.6	113.6	2400	1000	1.2	0.6	
					POT. NARROW	77.8	64.1				

4	309351	498661	4.0	CHARA SPP.	763.3	504.9	2500	1000	1.3	0.6	
					POT. GRAMINEUS	13.0	8.9				
					POT. NARROW	0.7	0.4				

5	309351	498661	4.0	CHARA SPP.	212.5	80.5	2500	1000	1.3	0.6	
					POT. GRAMINEUS	9.4	6.6				
					VALLISNERIA AMER	0.2	0.1				

6	309351	498661	4.0	CHARA SPP.	569.8	213.2	2500	1000	1.3	0.6	
					POT. GRAMINEUS	18.9	13.4				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE BOTTOM	SURFACE BOTTOM
DETROIT	BELLE	1	1	312759 499951	11.0	VALLISNERIA AMER	61.8	35.6	300 16
			2	312759 499951	11.0	POT. GRAMINEUS	7.8	6.3	300 16
						VALLISNERIA AMER	63.1	32.8	
						BUTOMUS UMBELLAT	2.4	1.6	
			3	312759 499951	11.0	NAJAS FLEXILIS	TRACE		
						POT. GRAMINEUS	TRACE		
2		1	1	312768 499959	8.0	VALLISNERIA AMER	72.8	40.6	620 90
			2	312768 499959	8.0	POT. ZOSTERIFORM	6.6	5.1	620 90
						VALLISNERIA AMER	22.6	13.4	
			3	312768 499959	8.0	VALLISNERIA AMER	102.0	61.8	620 90
			1	312780 499965	9.0	POT. RICHARDSONI	58.7	43.5	900 35
						VALLISNERIA AMER	82.0	52.3	
3		2	1	312780 499965	9.0	POT. CRISPUS	TRACE		
						POT. RICHARDSONI	118.2	80.3	
						VALLISNERIA AMER	20.8	11.2	
			3	312780 499965	9.0	POT. CRISPUS	2.3	1.6	900 35
						POT. RICHARDSONI	104.2	67.4	
						VALLISNERIA AMER	47.6	29.5	
4		1	1	312789 499974	9.0	CHARA SPP.	15.2	4.8	1300 350
						NAJAS FLEXILIS	19.1	13.3	
						VALLISNERIA AMER	26.4	16.1	
			2	312789 499974	9.0	CHARA SPP.	35.6	11.1	1300 350
						NAJAS FLEXILIS	79.0	64.1	
						POT. NARROW	9.7	6.8	
5		1	1	312804 499983	8.0	VALLISNERIA AMER	22.5	13.3	
			3	312789 499974	9.0	CHARA SPP.	19.0	2.9	1300 350
						VALLISNERIA AMER	36.3	22.4	
			1	312804 499983	8.0	POT. RICHARDSONI	8.6	6.7	1500 220
						VALLISNERIA AMER	20.7	14.6	
			2	312804 499983	8.0	ELODEA CANADENS	1.9	1.2	1500 220
3		1	1	312804 499983	8.0	POT. RICHARDSONI	24.7	19.1	
						VALLISNERIA AMER	43.7	28.7	
			3	312804 499983	8.0	MYRIO. SPICATUM	3.7	2.4	1500 220
						POT. RICHARDSONI	12.0	9.6	
						VALLISNERIA AMER	43.2	28.5	

6	1	312810 49986	11.0	NAJAS FLEXILIS VALLISNERIA AMER	1.4 40.4	0.7 24.3	150	2.0	1.4
	2	312810 49986	11.0	VALLISNERIA AMER	44.4	25.2	2600	2.0	1.4
	3	312810 49986	11.0	POT. RICHARDSONI VALLISNERIA AMER	1.6 8.4	1.2 4.1	2600	2.0	1.4
7	1	312852 49996	4.5	NAJAS FLEXILIS NITELLA HYALINA POT. NARROW VALLISNERIA AMER	TRACE 188.5 TRACE TRACE	65.6	3000	0.1	0.0
	2	312852 49996	4.5	CHARA SPP. VALLISNERIA AMER	195.6 1.4	76.4 0.9	3000	0.1	0.0
	3	312852 49996	4.5	CHARA SPP. MYRIO. SPICATUM NAJAS FLEXILIS VALLISNERIA AMER NITELLOP. OBTUSA	198.1 TRACE 17.1 10.9 83.5	65.4 12.4 5.2 30.3	3000	0.1	0.0
	4	312858 49997	7.0	MYRIO. SPICATUM POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	6.8 21.8 58.2 11.6	5.2 15.8 36.6 5.2	4000	0.1	0.0
	5	312858 49997	7.0	MYRIO. SPICATUM POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	7.3 13.7 53.3 74.0	5.4 10.8 31.9 25.5	4000	0.1	0.0
	6	312858 49997	7.0	MYRIO. SPICATUM POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	TRACE 10.7 14.3 68.5	8.9 8.5 26.6	4000	0.1	0.0
8	1	312845 49994	6.0	MYRIO. SPICATUM NITELLOP. OBTUSA	9.1 242.4	6.3 95.7	3500	0.2	0.1
	2	312845 49994	6.0	MYRIO. SPICATUM NITELLOP. OBTUSA	TRACE 181.5	72.5	3500	0.2	0.1
	3	312845 49994	6.0	MYRIO. SPICATUM NITELLOP. OBTUSA	6.9 191.5	5.6 68.4	3500	0.2	0.1
	4	312840 49995	7.0	MYRIO. SPICATUM VALLISNERIA AMER NITELLOP. OBTUSA	361.2 22.0 76.4	175.2 13.1 35.2	4000	0.1	0.0
	5	312840 49995	7.0	MYRIO. SPICATUM VALLISNERIA AMER NITELLOP. OBTUSA	310.0 5.2 10.2	232.0 2.2 4.7	4000	0.1	0.0
	6	312840 49995	7.0	MYRIO. SPICATUM POT. RICHARDSONI VALLISNERIA AMER NITELLOP. OBTUSA	106.1 9.4 19.8 12.5	78.8 6.4 11.2 5.1	4000	0.1	0.0
9	1	312833 49996	7.0	MYRIO. SPICATUM	110.5	77.0	4500	0.3	0.1

2	312833 499996	7.0	VALLISNERIA AMER NITELLOP. OBTUSA	8.0 9.4	5.2 4.0				
			CHARA SPP.	66.9	27.2	4500	360	0.3	0.1
			MYRIO. SPICATUM	34.8	16.2				
			POT. RICHARDSONI	2.0	1.3				
			VALLISNERIA AMER	2.5	1.6				
3	312833 499996	7.0	CHARA SPP.	10.4	3.6	4500	360	0.3	0.1
			MYRIO. SPICATUM	47.7	35.7				
			POT. NARROW	TRACE					
			VALLISNERIA AMER	2.2	0.9				
			NITELLOP. OBTUSA	3.6	1.5				
4	312833 499992	5.5	CHARA SPP.	157.9	65.6	4000	1500	0.4	0.1
			NITELLOP. OBTUSA	22.7	9.2				
5	312833 499992	5.5	CHARA SPP.	234.1	80.0	4000	1500	0.4	0.1
			NITELLOP. OBTUSA	8.6	3.3				
6	312833 499992	5.5	CHARA SPP.	75.1	31.6	4000	1500	0.4	0.1
			NITELLOP. OBTUSA	72.9	30.7				
10	312821 499989	5.0	CHARA SPP.	70.6	26.3	2600	1100	0.3	0.2
			NAJAS FLEXILIS	10.0	7.2				
			NITELLA HYALINA	1.4	0.6				
			POT. GRAMINEUS	68.7	39.8				
			VALLISNERIA AMER	18.2	11.0				
2	312821 499989	5.0	CHARA SPP.	1.2	0.5	2600	1100	0.3	0.2
			NAJAS FLEXILIS	4.7	3.4				
			POT. NODOSUS	161.8	111.5				
			POT. NARROW	27.9	22.8				
			VALLISNERIA AMER	1.8	1.3				
			NITELLOP. OBTUSA	2.8	1.1				
3	312821 499989	5.0	CHARA SPP.	22.8	8.5	2600	1100	0.3	0.2
			NAJAS FLEXILIS	17.8	13.2				
			POT. GRAMINEUS	65.3	44.7				
			POT. RICHARDSONI	20.1	13.5				
			VALLISNERIA AMER	3.2	2.2				
			NITELLOP. OBTUSA	1.1	0.4				
4	312826 499993	5.5	CHARA SPP.	24.9	11.2	3900	1400	1.3	0.2
			NAJAS FLEXILIS	54.8	35.4				
			POT. GRAMINEUS	10.8	7.6				
			POT. NARROW	16.2	11.9				
			VALLISNERIA AMER	9.6	6.6				
			NITELLOP. OBTUSA	2.1	1.1				
5	312826 499993	5.5	CHARA SPP.	40.8	13.1	3900	1400	1.3	0.2
			NAJAS FLEXILIS	41.3	29.1				
			POT. RICHARDSONI	19.0	11.6				
			POT. NARROW	5.1	3.4				
			VALLISNERIA AMER	9.7	6.5				
			NITELLOP. OBTUSA	55.0	19.7				
6	312826 499993	5.5	CHARA SPP.	5.7	2.1	3900	1400	1.3	0.2
			NAJAS FLEXILIS	85.7	59.0				
			VALLISNERIA AMER	3.4	1.9				

18.1

45.0

NITELLOP. OBTUSA

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE	BOTTOM
DETROIT	HENNEPIN	1	1	314066 500670	6.0	VALLISNERIA AMER	97.8	44.0 1500	55 0.3 0.1
			2	314066 500670	6.0	VALLISNERIA AMER	171.0	57.7 1500	55 0.3 0.1
			3	314066 500670	6.0	VALLISNERIA AMER	182.0	76.5 1500	55 0.3 0.1
2			1	314062 500675	9.0	POT. RICHARDSONI VALLISNERIA AMER	83.8 35.6	62.2 3500	150 0.2 0.2
			2	314062 500675	9.0	POT. RICHARDSONI	86.7	59.2 3500	150 0.2 0.2
			3	314062 500675	9.0	POT. RICHARDSONI VALLISNERIA AMER	68.0 2.1	52.5 3500	150 0.2 0.2
4			1	314066 500676	6.5	VALLISNERIA AMER	105.4	49.2 2400	280 0.2 0.1
			2	314066 500676	6.5	VALLISNERIA AMER	33.9	13.7 2400	280 0.2 0.1
			3	314066 500676	6.5	VALLISNERIA AMER	121.2	60.4 2400	280 0.2 0.1
3			1	314076 500684	5.5	VALLISNERIA AMER	24.2	13.0 1500	350 0.1 0.0
			2	314076 500684	5.5	VALLISNERIA AMER	79.5	46.9 1500	350 0.1 0.0
			3	314076 500684	5.5	VALLISNERIA AMER	53.0	20.5 1500	350 0.1 0.0
4			1	314088 500682	8.0	VALLISNERIA AMER	52.6	28.2 1500	140 0.1 0.0
			2	314088 500682	8.0	VALLISNERIA AMER	152.0	75.3 1500	140 0.1 0.0
			3	314088 500682	8.0	VALLISNERIA AMER	74.9	42.5 1500	140 0.1 0.0
5			1	314076 500692	6.0	VALLISNERIA AMER	77.8	41.8 1600	320 0.1 0.0
			2	314076 500692	6.0	VALLISNERIA AMER	119.9	50.9 1600	320 0.1 0.0
			3	314076 500692	6.0	VALLISNERIA AMER	116.5	55.3 1600	320 0.1 0.0
6			1	314082 500696	5.0	CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER	7.5 8.3 40.0	1.5 1800	540 0.2 0.1
			2	314082 500696	5.0	CHARA SPP. POT. RICHARDSONI VALLISNERIA AMER	25.9 14.9 57.5	5.2 1800	540 0.2 0.1
			3	314082 500696	5.0	CHARA SPP. VALLISNERIA AMER	20.8 214.6	4.4 1800	540 0.2 0.1
7			1	314094 500702	7.0	VALLISNERIA AMER	88.1	41.0 1500	330 0.1 0.0
			2	314094 500702	7.0	CHARA SPP.	2.2	0.7 1500	330 0.1 0.0

VALLISNERIA AMER									
3	314094	500702	7.0	CHARA SPP.	97.5	56.9			
				TRACE			1500	330	0.1
				MYRIO. SPICATUM	1.4	1.1			0.0
				VALLISNERIA AMER	81.0	54.8			
8									
1	314078	500701	6.0	MYRIO. SPICATUM	41.8	24.8	1500	51	0.3
				VALLISNERIA AMER	180.0	92.7			0.0
2	314078	500701	6.0	VALLISNERIA AMER	224.2	109.2	1500	51	0.3
									0.0
3	314078	500701	6.0	MYRIO. SPICATUM	5.0	3.7	1500	51	0.3
				POT. GRAMINEUS	1.4	1.0			0.0
				VALLISNERIA AMER	89.8	47.8			
4									
314078	500702	6.0	MYRIO. SPICATUM	147.1	78.5	1300	25	0.2	0.0
				VALLISNERIA AMER	38.9	22.2			
5									
314078	500702	6.0	MYRIO. SPICATUM	214.9	159.9	1300	25	0.2	0.0
				VALLISNERIA AMER	3.1	1.9			
6									
314078	500702	6.0	MYRIO. SPICATUM	193.8	121.7	1300	25	0.2	0.0
				VALLISNERIA AMER	30.2	16.4			
7									
314078	500716	6.0	NAJAS FLEXILIS	2.7	1.8	710	91	0.4	0.2
				POT. RICHARDSONI	23.9	17.1			
				VALLISNERIA AMER	98.2	46.1			
8									
314078	500716	6.0	POT. RICHARDSONI	32.4	22.6	710	91	0.4	0.2
				VALLISNERIA AMER	4.6	3.3			
9									
314078	500716	6.0	POT. RICHARDSONI	51.8	39.1	710	91	0.4	0.2
				VALLISNERIA AMER	6.8	2.5			
9									
314087	500704	5.0	VALLISNERIA AMER	19.1	12.0	1200	35	0.2	0.0
2	314087	500704	5.0	CHARA SPP.	12.3	3.5	1200	35	0.2
				VALLISNERIA AMER	155.2	72.2			0.0
3									
314087	500704	5.0	CHARA SPP.	2.2	0.5	1200	35	0.2	0.0
				POT. RICHARDSONI	5.1	3.8			
				VALLISNERIA AMER	47.6	24.1			
10									
314100	500715	6.5	VALLISNERIA AMER	239.5	86.8	1300	65	0.1	0.1
2	314100	500715	6.5	VALLISNERIA AMER	116.7	45.6	1300	65	0.1
									0.1
3	314100	500715	6.5	VALLISNERIA AMER	114.7	45.9	1300	65	0.1
									0.1
11									
314088	500719	6.5	VALLISNERIA AMER	118.2	62.3	1400	290	0.2	0.0
2	314088	500719	6.5	CHARA SPP.	TRACE		1400	290	0.2
				NAJAS FLEXILIS	5.6	3.6			0.0
				VALLISNERIA AMER	123.5	65.5			
3									
314088	500719	6.5	CHARA SPP.	11.6	3.7	1400	290	0.2	0.0
				NITELLA HYALINA	0.4	0.2			
				VALLISNERIA AMER	62.0	29.7			
4									
314088	500719	6.5	NAJAS FLEXILIS	46.6	30.4	1400	290	0.2	0.0

[illegible]

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
DETROIT	STONY	1	1	314223 500978	7.5	POT. NARROW VALLISNERIA AMER	11.9	4.5	2800	32 0.6 0.1
		2	314223 500978	7.5	VALLISNERIA AMER	179.3	87.4	2800	32	0.6 0.1
		3	314223 500978	7.5	POT. NARROW VALLISNERIA AMER	55.2	39.8	2800	32	0.6 0.1
						168.6	85.5			
		2	1	314212 500975	8.0	VALLISNERIA AMER	350.3	127.2	2800	4 0.7 0.1
		2	314212 500975	8.0	VALLISNERIA AMER	126.6	70.6	2800	4	0.7 0.1
		3	314212 500975	8.0	VALLISNERIA AMER	210.0	103.3	2800	4	0.7 0.1
		3	1	314205 500973	7.5	POT. NODOSUS	119.8	82.8	2600	250 0.5 0.2
		2	314205 500973	7.5	HETERANTHERA DUB POT. NODOSUS	8.4	5.8	2600	250	0.5 0.2
						103.3	76.3			
		3	314205 500973	7.5	POT. NODOSUS	126.3	83.2	2600	250	0.5 0.2
		4	1	314189 500972	10.0	MYRIO. SPICATUM VALLISNERIA AMER	144.6	93.0	2100	37 0.8 0.1
						5.9	2.5			
		2	314189 500972	10.0	MYRIO. SPICATUM VALLISNERIA AMER	71.3	50.7	2100	37	0.8 0.1
						1.6	0.9			
		3	314189 500972	10.0	MYRIO. SPICATUM VALLISNERIA AMER	199.2	117.9	2100	37	0.8 0.1
						19.4	11.1			
		5	1	314229 500985	8.0	VALLISNERIA AMER	192.4	83.4	2800	25 0.4 0.1
		2	314229 500985	8.0	VALLISNERIA AMER	140.0	63.1	2800	25	0.4 0.1
		3	314229 500985	8.0	VALLISNERIA AMER	185.8	94.7	2800	25	0.4 0.1
		6	1	314220 500986	4.0	HETERANTHERA DUB POT. CRISPUS	292.2	195.7	3000	180 0.2 0.1
						6.8	5.7			
		2	314220 500986	4.0	ELODEA CANADENSIS HETERANTHERA DUB POT. CRISPUS	0.5	0.3	3000	180	0.2 0.1
						550.1	365.2			
		3	314220 500986	4.0	ELODEA CANADENSIS HETERANTHERA DUB POT. CRISPUS	2.6	1.5	3000	180	0.2 0.1
						327.4	280.5			
						20.6	18.4			
		7	1	314232 500988	3.0	MYRIO. SPICATUM	241.2	189.3	2900	150 0.2 0.1
		2	314232 500988	3.0	MYRIO. SPICATUM VALLISNERIA AMER	176.2	135.0	2900	150	0.2 0.1
						19.0	14.2			

3	314232	500988	3.0	HETERANTHERA DUB MYRIO. SPICATUM VALLISNERIA AMER	0.9 272.3 7.1	0.6 198.8 4.5	2900	150	0.2	0.1	
8	1	314227	500991	3.5	HETERANTHERA DUB POT. CRISPUS	267.7 22.7	183.4 18.7	3200	35	0.1	0.0
2	314227	500991	3.5	HETERANTHERA DUB POT. CRISPUS	246.4 52.9	167.7 41.6	3200	35	0.1	0.0	
3	314227	500991	3.5	HETERANTHERA DUB POT. CRISPUS	230.2 17.7	152.9 14.2	3200	35	0.1	0.0	
9	1	314245	500997	5.0	MYRIO. SPICATUM VALLISNERIA AMER	421.0 2.7	182.9 1.7	3000	120	0.3	0.3
2	314245	500997	5.0	HETERANTHERA DUB MYRIO. SPICATUM VALLISNERIA AMER	29.7 167.4 26.4	23.5 116.8 19.3	3000	120	0.3	0.3	
3	314245	500997	5.0	HETERANTHERA DUB MYRIO. SPICATUM VALLISNERIA AMER	18.9 251.3 11.5	15.6 171.4 8.0	3000	120	0.3	0.3	
10	1	314239	500997	4.0	HETERANTHERA DUB HETERANTHERA DUB POT. CRISPUS	139.2 258.3 16.6	84.4 144.5 10.3	2500	160	0.3	0.2
3	314239	500997	4.0	HETERANTHERA DUB HETERANTHERA DUB POT. CRISPUS	636.2 275.0 15.1	402.1 203.8 10.9	2500	160	0.3	0.2	
11	1	314254	501003	5.0	MYRIO. SPICATUM VALLISNERIA AMER	199.9 10.6	139.6 7.6	2800	830	0.8	0.2
2	314254	501003	5.0	MYRIO. SPICATUM VALLISNERIA AMER	199.9 10.6	139.6 7.6	2800	830	0.8	0.2	
3	314254	501003	5.0	MYRIO. SPICATUM VALLISNERIA AMER	284.1 12.2	208.5 9.1	2800	830	0.8	0.2	

APPENDIX M

Collections of Emergent Macrophytes

EMERGENT MACROPHYTE DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER	LOWER	COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
DETROIT	STONY	8	4	314234	500995	2.0	TYPHA ANGUSTIFOL	213.4	210.6	1700	-	0.1
			5	314234	500996	2.0	TYPHA ANGUSTIFOL	230.3	205.2	1700	-	0.1
			6	314234	500996	2.0	TYPHA ANGUSTIFOL	263.3	245.5	1700	-	0.1
		10	4	314246	501004	1.5	TYPHA ANGUSTIFOL	532.3	440.9	2400	-	0.1
			5	314246	501003	1.5	TYPHA ANGUSTIFOL	487.4	448.8	2400	-	0.1
			6	314246	501003	1.5	TYPHA ANGUSTIFOL	783.8	635.0	2400	-	0.1
			7	314249	501007	1.0	SPARG. EURYCARP	114.5	62.0	2500	-	0.2
			8	314249	501007	1.0	SPARG. EURYCARP	120.3	64.6	2500	-	0.2
			9	314249	501007	1.0	SPARG. EURYCARP	111.9	102.6	2500	-	0.2

EMERGENT MACROPHYTE DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
							WEIGHT (G/M2)	SURFACE BOTTOM	SURFACE BOTTOM
ST. CLAIR FAWN		7	4	309584 498268	2.0	SCIRPUS ACUTIS	222.2	203.4 3000	200 0.2 0.0
			5	309584 498268	2.0	SCIRPUS ACUTIS	286.1	271.0 3000	200 0.2 0.0
			6	309584 498268	2.0	SCIRPUS ACUTIS	283.1	263.5 3000	200 0.2 0.0
DETROIT STONY		8	4	0 0 0 2.0	2.0	TYPHA ANGUSTIFOL	1609.9	1271.3 2100	1500 0.3
			5	0 0 0 2.0	2.0	TYPHA ANGUSTIFOL	2968.9	2632.3 2100	1500 0.3
			6	0 0 0 2.0	2.0	TYPHA ANGUSTIFOL	1810.2	1470.1 2100	1500 0.3
			4	0 0 0 0.5	0.5	SPARG. EURYCARP	227.4	164.7 1000	- 0.1
			5	0 0 0 0.5	0.5	SPARG. EURYCARP	197.0	164.2 1000	- 0.1
			6	0 0 0 0.5	0.5	SPARG. EURYCARP	450.6	388.8 1000	- 0.1
		7	0	0 0 0 0.5	0.5	SAG. LATIFOLIA	35.6	30.9 1100	- 0.1
						SCIRPUS FLUVIATI	854.1	602.5	-
			8	0 0 0 0.5	0.5	SAG. LATIFOLIA	5.5	4.6 1100	- 0.1
		9	0	0 0 0 0.5	0.5	SCIRPUS FLUVIATI	936.6	693.3	-
						PHAL. ARUNDINACE	29.6	26.8	-
			0	0 0 0 0.5	0.5	SAG. LATIFOLIA	11.3	9.7 1100	- 0.1
		10	0	0 0 0 1.0	1.0	SCIRPUS AMERICAN	207.0	190.2 2300	- 0.3
						SCIRPUS ACUTIS	2.8	2.5	-
			11	0 0 0 1.0	1.0	E. SMALII	38.2	34.8 2300	- 0.3
		12	0	0 0 0 1.0	1.0	SCIRPUS AMERICAN	184.4	144.6	-
						E. SMALII	36.2	33.7 2300	- 0.3
						SAG. LATIFOLIA	1.0	0.9	-
						SCIRPUS AMERICAN	307.5	279.6	-

EMERGENT MACROPHYTE DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
ST. CLAIR FAWN	7												
			7	308584	498268	2.0	SCIRPUS ACUTIS	317.6	292.0	2000	-	0.1	-
			8	309584	498268	2.0	SCIRPUS ACUTIS	394.1	270.4	2000	-	0.1	-
			9	308584	498268	2.0	SCIRPUS ACUTIS	317.7	296.5	2000	-	0.1	-
DETROIT STONY	10												
			4	314241	500988	1.0	TYPHA ANGUSTIFOL	628.7	580.2	450	-	0.0	-
			5	314241	500988	1.0	TYPHA ANGUSTIFOL	658.1	616.3	450	-	0.0	-
			6	314241	500988	1.0	TYPHA ANGUSTIFOL	656.1	496.7	450	-	0.0	-
			7	314240	500997	1.0	SPARG. EURYCARP	111.1	79.2	650	-	0.0	-
			8	314240	500997	1.0	SPARG. EURYCARP	161.6	95.5	650	-	0.0	-
			9	314240	500997	1.0	SPARG. EURYCARP	108.6	77.7	650	-	0.0	-
			10	314239	500997	1.0	SCIRPUS AMERICAN	147.0	111.6	600	-	0.1	-
							SCIRPUS VALIDUS	10.4	9.4				
			11	314239	500997	1.0	SCIRPUS AMERICAN	67.7	54.3	600	-	0.1	-
							SCIRPUS VALIDUS	35.0	31.2				
			12	314239	500997	1.0	SCIRPUS AMERICAN	158.6	121.6	600	-	0.1	-
							SCIRPUS VALIDUS	38.5	27.8				
			11	314250	501006	1.0	SPARG. EURYCARP	243.5	151.9	500	-	0.0	-
			5	314250	501006	1.0	SPARG. EURYCARP	219.4	140.9	500	-	0.0	-
			6	314250	501006	1.0	SPARG. EURYCARP	288.3	194.0	500	-	0.0	-

EMERGENT MACROPHYTE DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	CURRENT (FT./SEC.)
DETROIT	STONY	10	4	314246 501003	2.0	POT. CRISPUS TYPHA ANGUSTIFOL	0.5 686.9	0.4 601.2	3100 3100	0.0 0.0
			5	314246 501003	2.0	TYPHA ANGUSTIFOL	147.1	129.6	3500	3100
			6	314246 501003	2.0	TYPHA ANGUSTIFOL	426.1	403.2	3500	3100
			7	314242 501000	2.0	SCIRPUS AMERICAN SCIRPUS VALIDUS PHAL. ARUNDINACE	68.7 23.6 13.1	54.0 20.8 10.8	3600 3600	0.2 0.2
			8	314242 501000	2.0	E. CF. ERYTHRO SCIRPUS AMERICAN SCIRPUS VALIDUS	62.2 80.0 61.5	50.4 72.0 50.4	3600 3600	0.2 0.2
			9	314242 501000	2.0	E. CF. ERYTHRO SCIRPUS AMERICAN SCIRPUS VALIDUS SCIRPUS ACUTIS SPARG. EURYCARP	25.5 141.6 26.9 17.1 3.0	15.3 122.4 14.6 14.0 2.6	3600 3600	0.2 0.2
			10	314238 500998	2.0	SAG. RIGIDA SAG. RIGIDA	19.5 9.9	10.7 6.0	2600 2600	0.1 0.0
			11	314238 500998	2.0	ELODEA CANADENS SAG. RIGIDA SAG. RIGIDA	0.3 14.6 33.8	0.2 3.6 32.4	2600 2600	0.1 0.0
			12	314238 500998	2.0	SAG. RIGIDA SAG. RIGIDA	27.8 34.3	4.7 21.6	2600 2600	0.1 0.0
			11	314250 501004	2.0	SPARG. EURYCARP	307.6	234.0	3200	0.0
			2	314250 501004	2.0	SPARG. EURYCARP	203.0	176.4	3200	0.0
			3	314250 501004	2.0	SPARG. EURYCARP	267.7	237.6	3200	0.0
			4	314249 501007	2.0	SAG. LATIFOLIA	11.8	3.3	3200	0.0
			5	314249 501007	2.0	POT. CRISPUS SAG. LATIFOLIA SPARG. EURYCARP	0.2 23.9 1.5	0.1 14.1 1.3	3200 3200	0.0 0.0
			6	314249 501007	2.0	SAG. RIGIDA SPARG. EURYCARP	28.8 0.3	21.6 0.2	3200 3200	0.0 0.0
						SPARG. EURYCARP	39.0	28.4		

EMERGENT MACROPHYTE DATA. JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE LIGHT (FOOT CANDLES)	WEIGHT (G/M2)	SURFACE	BOTTOM	CURRENT (FT./SEC.)
ST. CLAIR FAWN	7		7	309583	498272	2.5	SCIRPUS ACUTIS	59.0		50.4	4000	3000	0.7 0.7
			8	309583	498272	2.5	SCIRPUS ACUTIS	101.9		61.2	4000	3000	0.7 0.7
			9	309583	498272	2.5	SCIRPUS ACUTIS	73.9		50.4	4000	3000	0.7 0.7
DETROIT STONY	10		4	314246	501004	0.5	TYPHA SPP.	1037.0		946.8	2800	2900	0.2 0.1
			5	314246	501004	0.5	TYPHA SPP.	975.4		910.8	2800	2900	0.2 0.1
			6	314246	501004	0.5	TYPHA SPP.	1157.4		1090.8	2800	2900	0.2 0.1
			7	314241	501001	0.5	E. CF. ERYTHRO ELODEA CANADENS HETERANTHERA DUB MYRIO. SPICATUM SCIRPUS AMERICAN SCIRPUS VALIDUS VALLISNERIA AMER	6.1 1.1 0.2 0.6 389.0 42.9 0.1		5.2 0.7 0.2 0.5 338.4 32.4 0.1	2900 2900 2900 2900 2900 2900 2900	2900 2900 2900 2900 2900 2900 2900	0.5 0.1 0.2 0.5 0.2 0.2 0.1
			8	314241	501001	0.5	E. CF. ERYTHRO ELODEA CANADENS MYRIO. SPICATUM SCIRPUS AMERICAN SCIRPUS VALIDUS PHAL. ARUNDINACE	10.8 0.9 0.6 419.4 59.2 72.3		9.2 0.7 0.4 309.6 36.0 57.6	2900 2900 2900 2900 2900 2900	2900 2900 2900 2900 2900 2900	0.5 0.1 0.4 0.6 0.6 0.6
			9	314241	501001	0.5	SAG. LATIFOLIA SCIRPUS AMERICAN SCIRPUS VALIDUS TYPHA SPP. SPARG. EURYCARP	16.7 269.9 83.8 27.0 12.4		14.5 216.0 72.0 24.6 11.3	2900 2900 2900 2900 2900	2900 2900 2900 2900 2900	0.5 0.1 0.5 0.1 0.1

11	1	314248	501008	0.5	ELODEA CANADENS SPARG. EURYCARP	1.2 408.3	0.9	2400	2400	0.1	0.1
					SPARG. EURYCARP	341.7	309.6				
	2	314248	501008	0.5	ELODEA CANADENS SAG. LATIFOLIA	1.3 36.9	0.8	2400	2400	0.1	0.1
					SPARG. EURYCARP	685.6	25.2				
							554.4				
	3	314248	501008	0.5	ELODEA CANADENS VALLISNERIA AMER	0.8 0.1	0.5	2400	2400	0.1	0.1
					SPARG. EURYCARP	715.6	0.1				
							583.2				
	4	314249	501007	0.5	ELODEA CANADENS SAG. RIGIDA	2.0 313.4	0.9	2900	2900	0.1	0.1
							201.6				
	5	314249	501007	0.5	SAG. LATIFOLIA	110.1	86.4	2900	2900	0.1	0.1
					SAG. RIGIDA	308.1	230.4				
	6	314249	501007	0.5	SAG. LATIFOLIA	48.0	32.4	2900	2900	0.1	0.1
					SAG. RIGIDA	255.5	198.0				

EMERGENT MACROPHYTE DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	UPPER COORDINATES	LOWER COORDINATES	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT (FOOT CANDLES)	CURRENT (FT./SEC.)
ST. CLAIR FAWN		7	4	309585	498271	2.5	SCIRPUS ACUTIS	403.8	291.6	560	430
											0.1
											0.0
DETROIT STONY	10	4	314241	500998	1.0	E. CF. ERYTHRO	SCIRPUS AMERICAN	0.3	0.2	3400	3400
								413.6	316.8		0.4
								46.9	43.2		
								8.2	7.7		
		5	314241	500998	1.0	E. CF. ERYTHRO	SCIRPUS AMERICAN	5.7	5.0	3400	3400
								435.4	331.2		0.4
								53.0	44.2		
								2.1	1.9		
		6	314241	500998	1.0	SCIRPUS AMERICAN	SCIRPUS VALIDUS	477.0	356.4	3400	3400
								6.0	5.8		0.4
		7	314243	501001	1.0	TYPHA ANGUSTIFOL	TYPHA ANGUSTIFOL	1196.7	914.4	9000	9000
											0.2
		8	314243	501001	1.0	TYPHA ANGUSTIFOL	TYPHA ANGUSTIFOL	2022.3	1573.2	9000	9000
											0.2
		9	314243	501001	1.0	SAG. LATIFOLIA	TYPHA ANGUSTIFOL	2.4	2.0	9000	9000
								977.3	763.2		0.2
11		4	314248	501006	1.0	SPARG. EURYCARP	SPARG. EURYCARP	397.9	297.9	3400	3400
											0.0
		5	314248	501006	1.0	SPARG. EURYCARP	SPARG. EURYCARP	313.1	217.1	3400	3400
								338.9	266.4		0.0
		6	314248	501006	1.0	SPARG. EURYCARP	SPARG. EURYCARP	574.5	385.2	3400	3400
											0.0
		7	314248	501006	1.0	SAG. RIGIDA	SAG. RIGIDA	246.6	165.6	780	780
											0.1
		8	314248	501006	1.0	SAG. RIGIDA	SAG. RIGIDA	361.9	280.8	780	780
											0.1
		9	314248	501006	1.0	SAG. RIGIDA	SAG. RIGIDA	325.6	226.8	780	780
											0.1

APPENDIX N

Index Charts for Aerial Photographs and Photographs of Macrophyte Study Areas

[Only two pages of Appendix N are reproduced as part of this report. The charts and photographs are available on request from the U.S. Army Corps of Engineers, Detroit District, or the Great Lakes Fishery Laboratory.]

[illegible]



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N-2

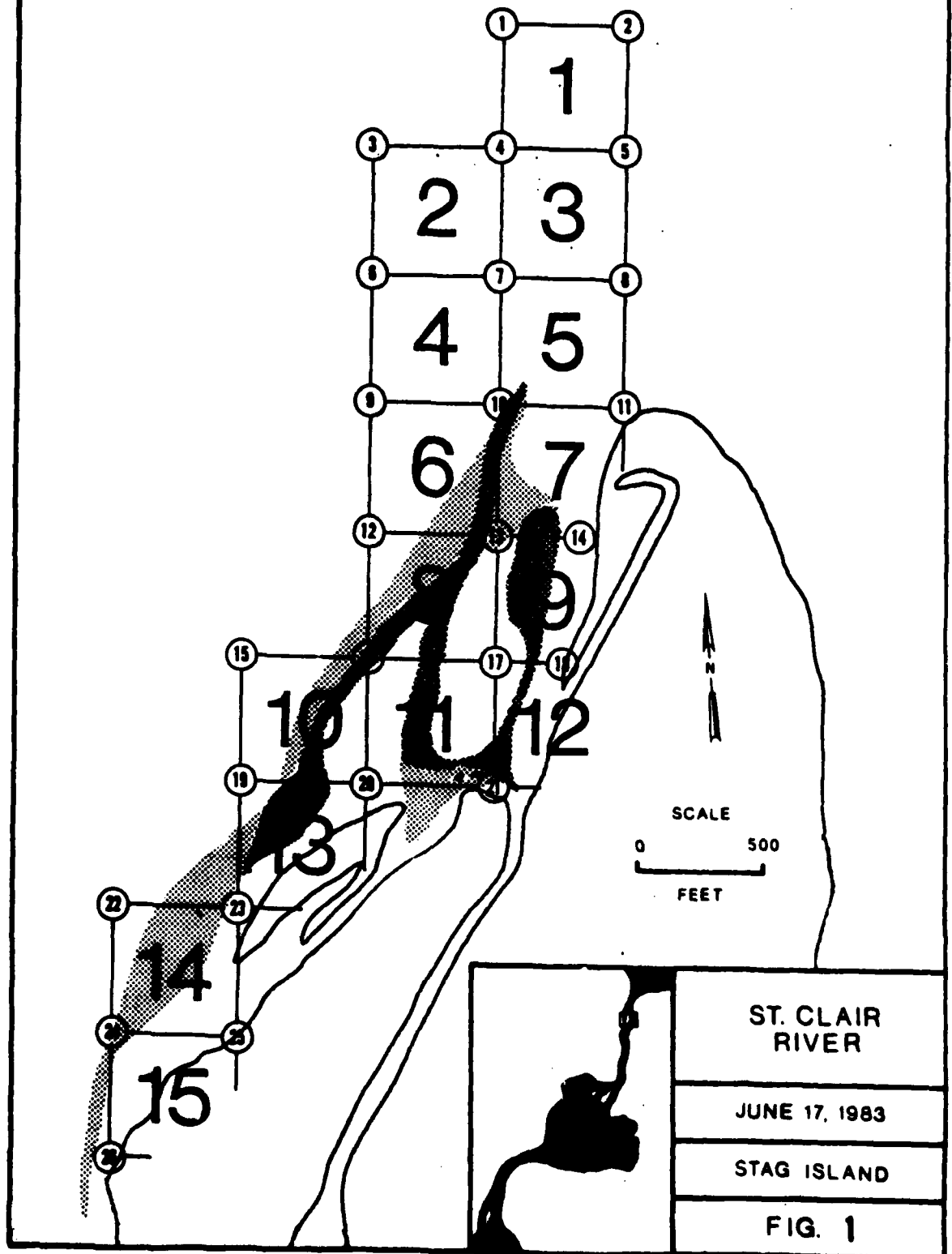
APPENDIX O

Macrophyte Distribution Maps

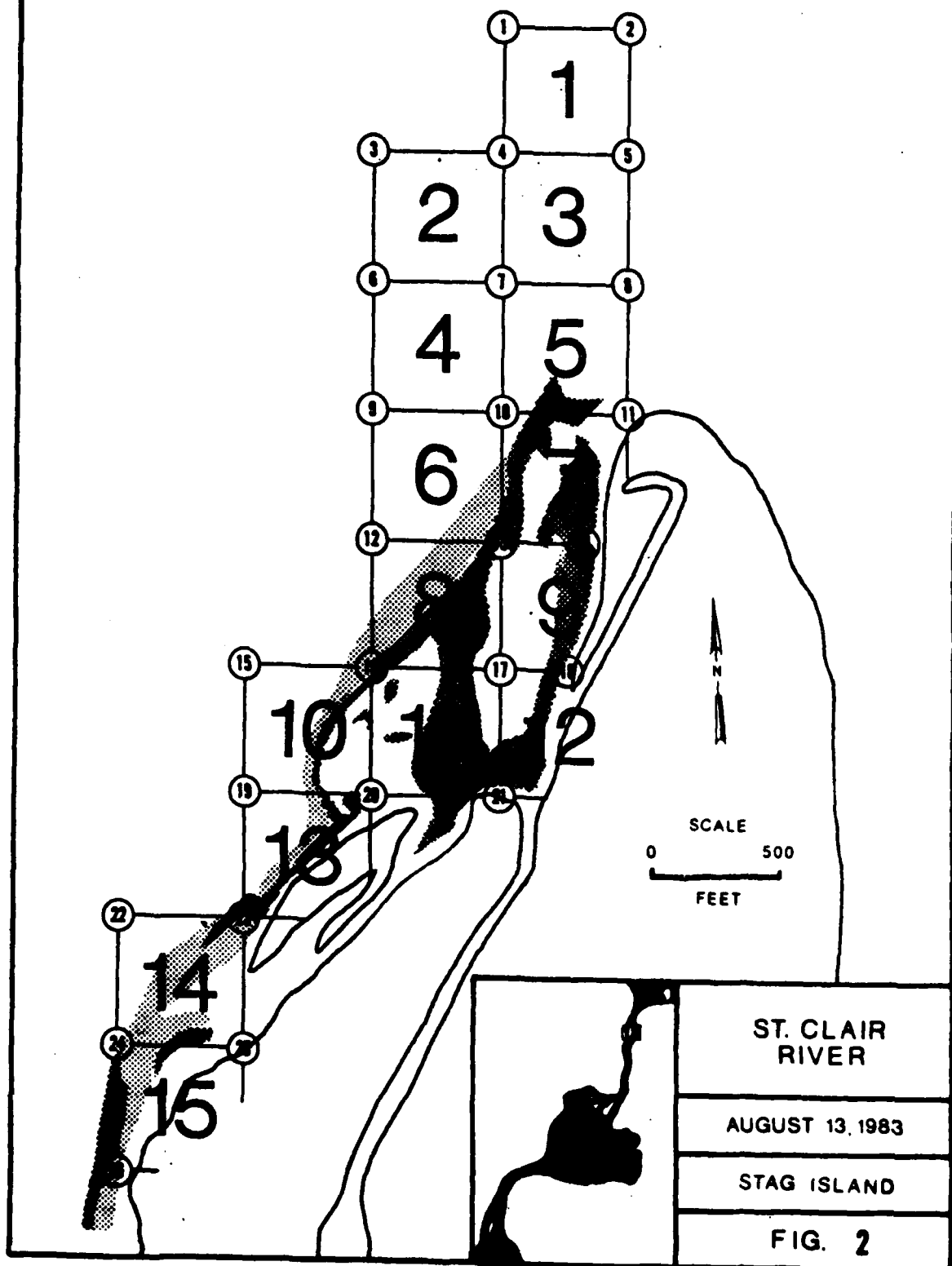
Because diversity of taxa within beds was great, it was not possible to outline the exact distribution of each species. The following legend places dominant taxa in a general area; the text discusses the location more specifically. The legend for Figs. 1-36 follows (see Fig. 16, for an example of the three types of shading used). In all figures "Potamogeton spp." = narrow-leaf forms of Potamogeton.

Type of Shading		
Black	Stippling	Crosshatching
<u>St. Clair River, Figs. 1-9 (1983) and 19-27 (1984)</u>		
<u>Scirpus acutus</u>	<u>Chara</u> <u>Potamogeton</u> spp.	<u>Elodea canadensis</u> <u>Myriophyllum spicatum</u> <u>Potamogeton gramineus</u> <u>Potamogeton</u> spp. <u>Potamogeton richardsonii</u>
<u>Detroit River, Figs. 10-18 (1983) and 28-36 (1984)</u>		
<u>Scirpus americanus</u> <u>Sparganium eurycarpum</u> <u>Typha angustifolia</u>	<u>Potamogeton</u> spp. <u>Vallisneria</u>	<u>Heteranthera dubia</u> <u>Myriophyllum spicatum</u> <u>Potamogeton crispus</u> <u>Potamogeton</u> spp. <u>Potamogeton richardsonii</u>

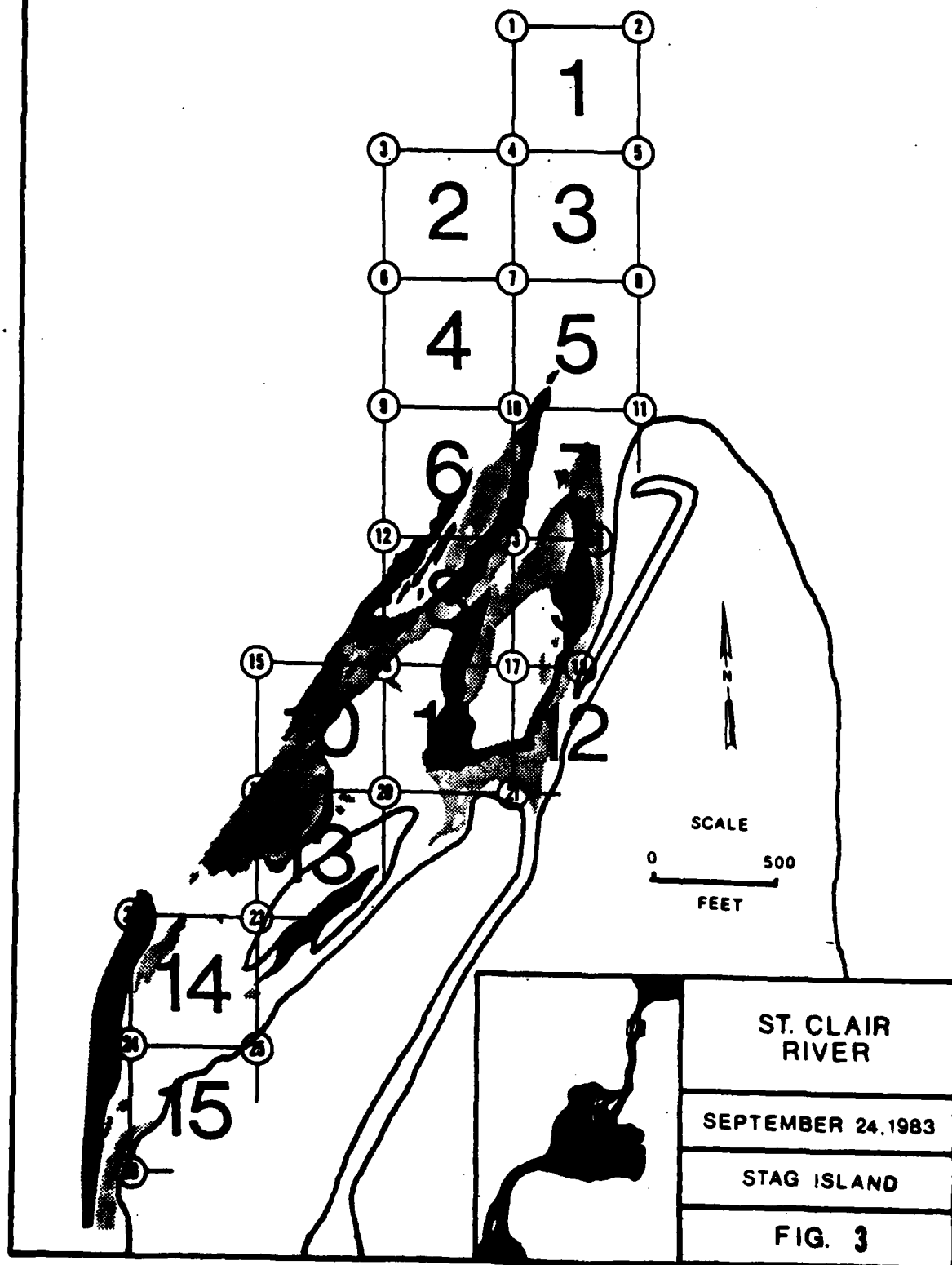
STAG ISLAND



STAG ISLAND



STAG ISLAND



FAWN ISLAND

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SCALE
0 500
FEET

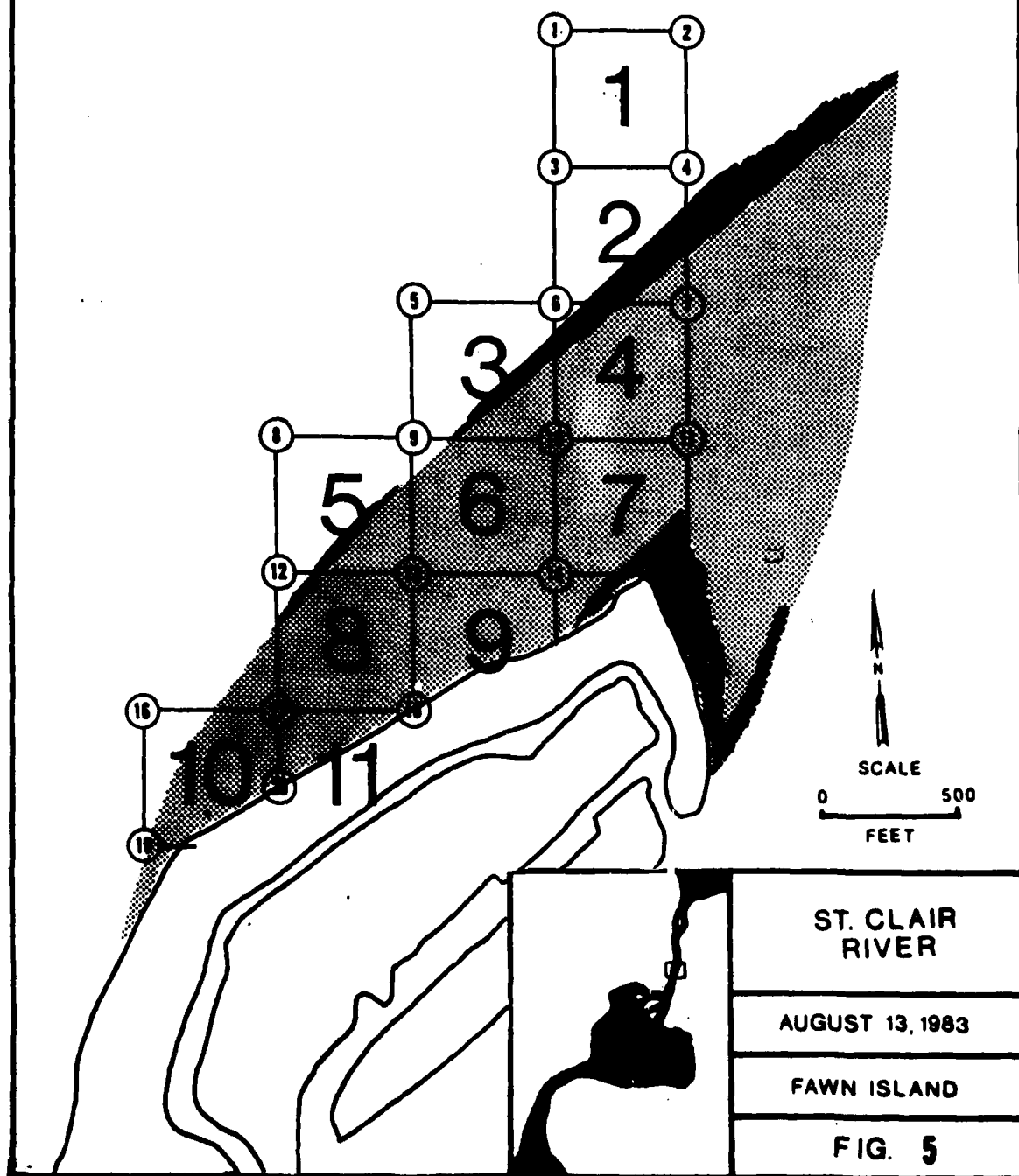
ST. CLAIR
RIVER

JUNE 17, 1983

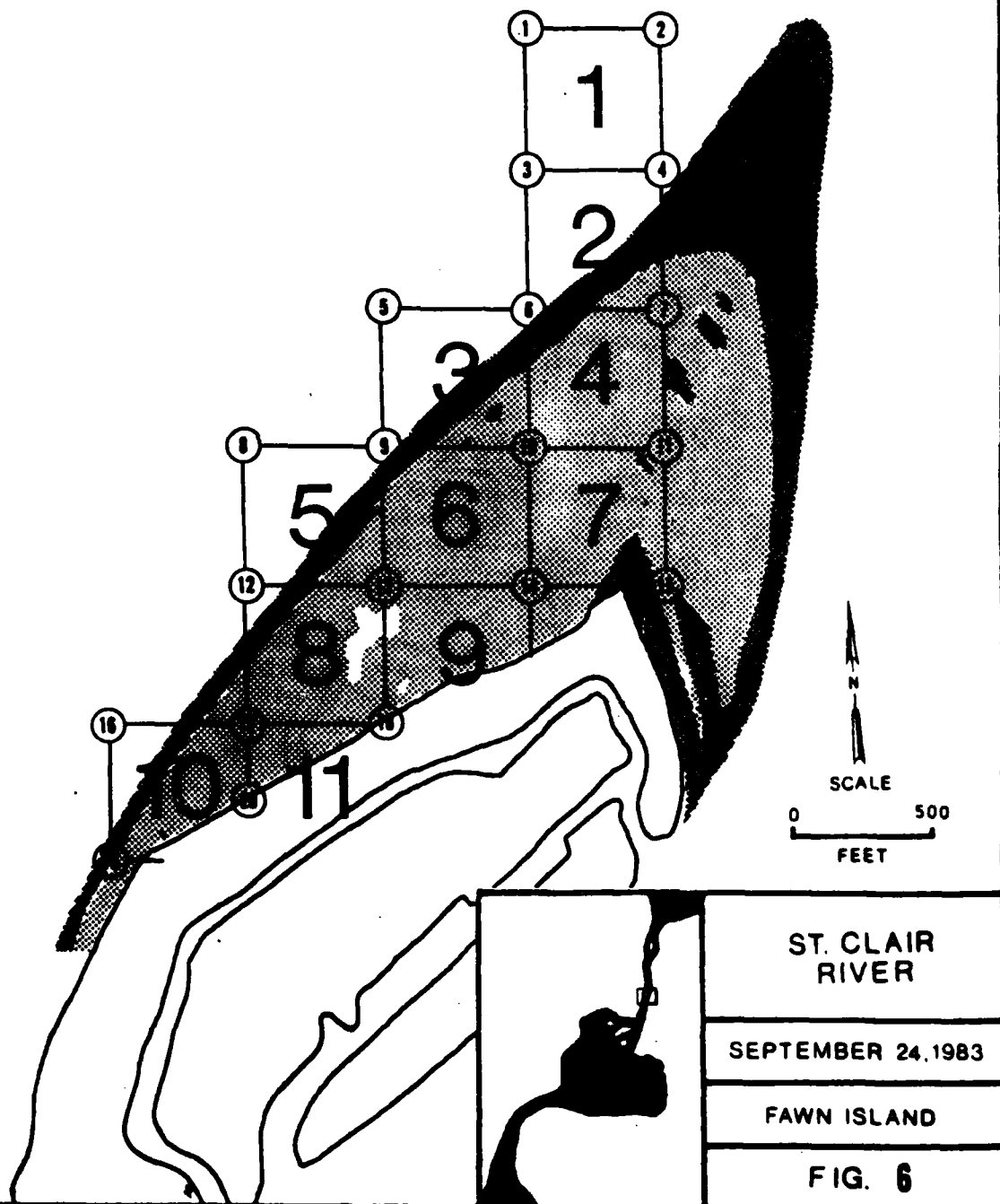
FAWN ISLAND

FIG. 4

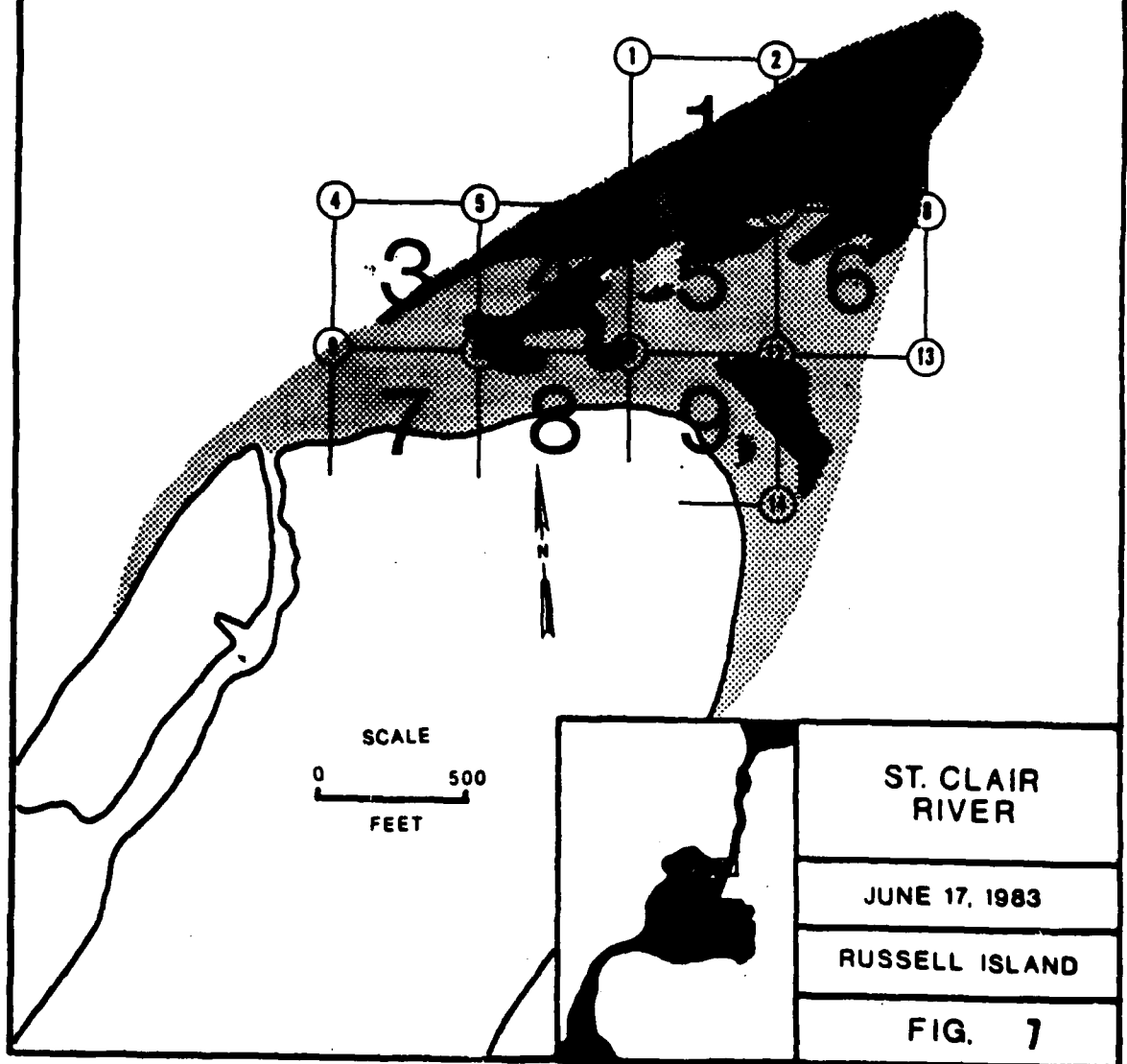
FAWN ISLAND



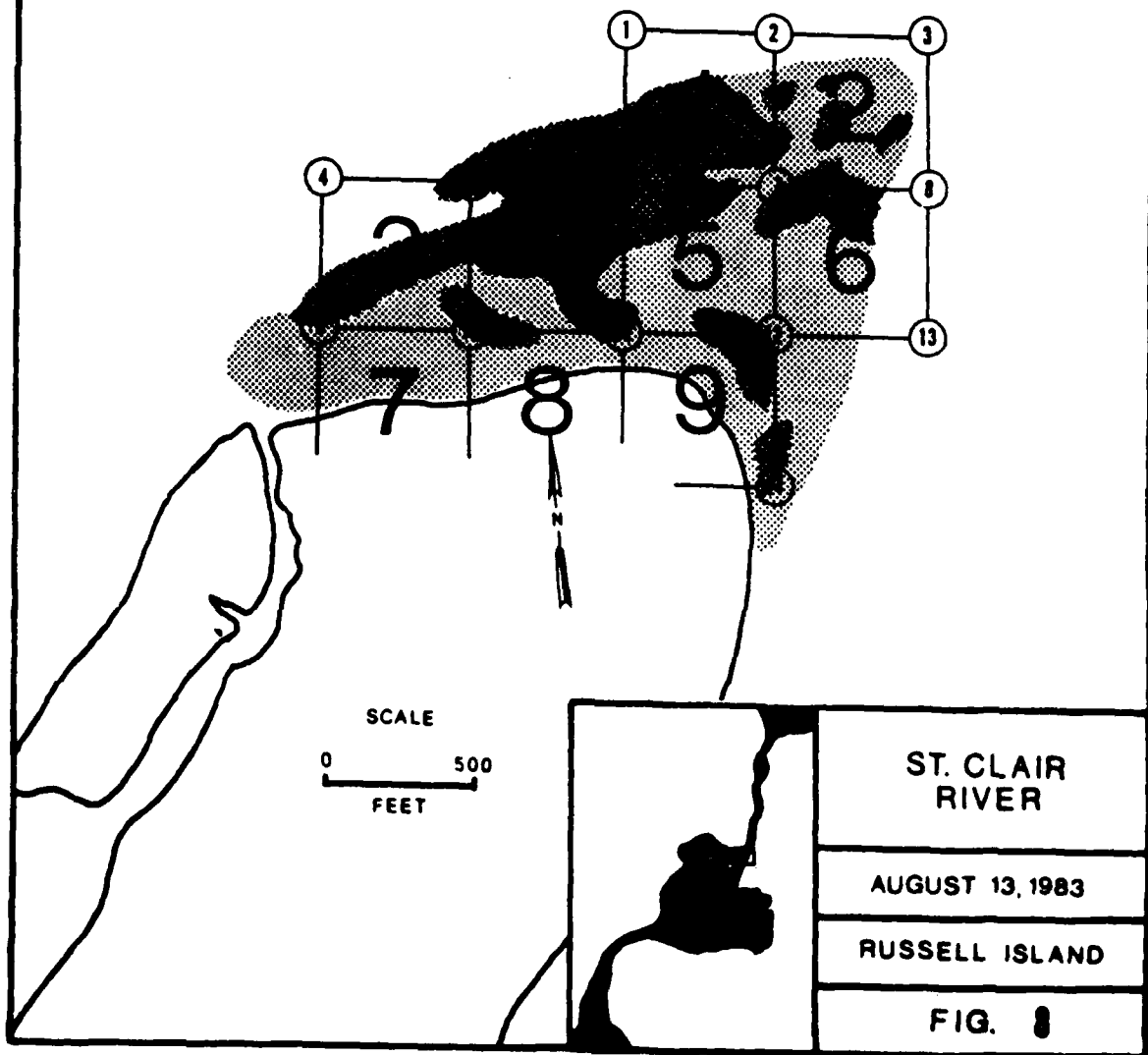
FAWN ISLAND



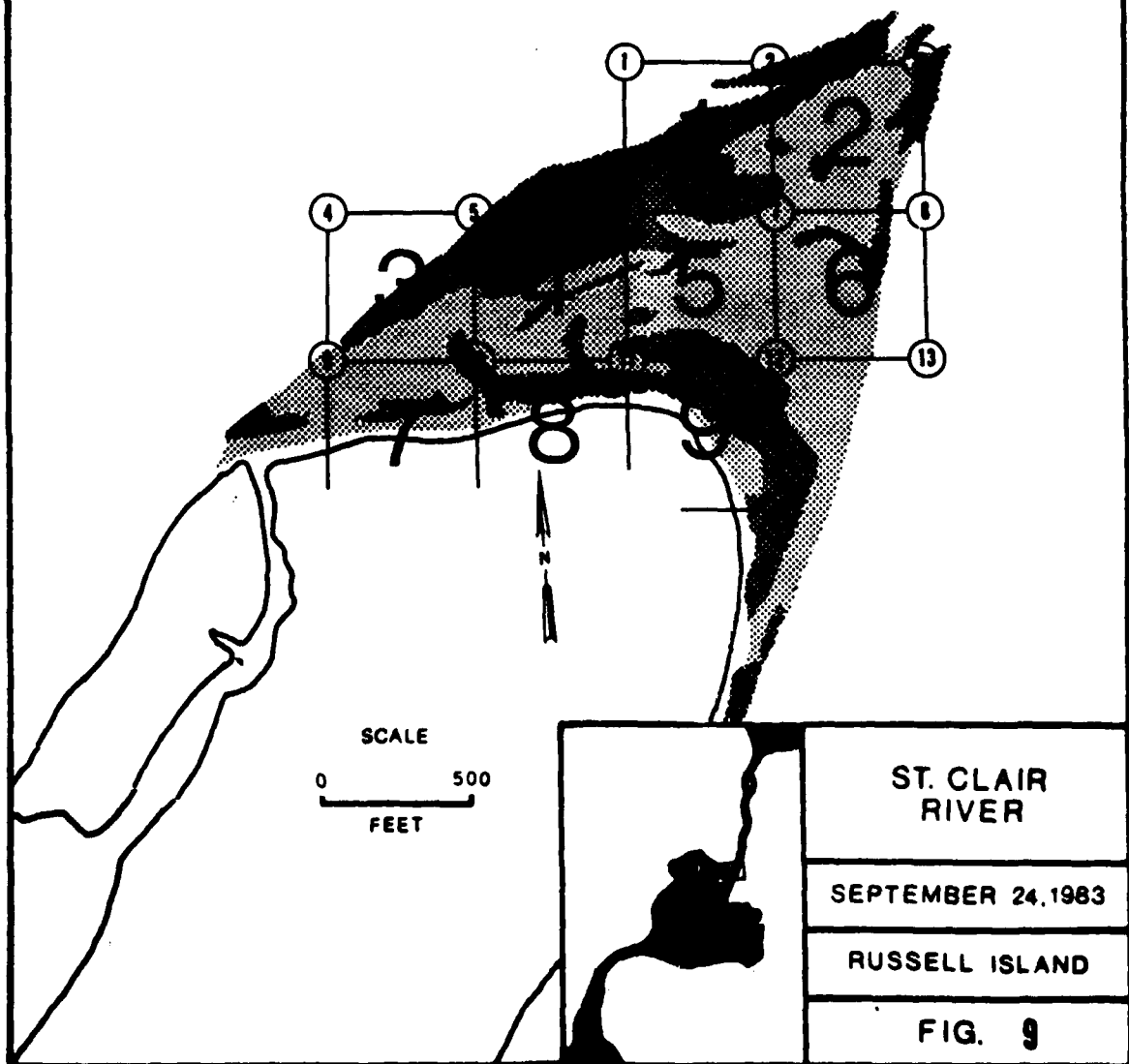
RUSSELL ISLAND



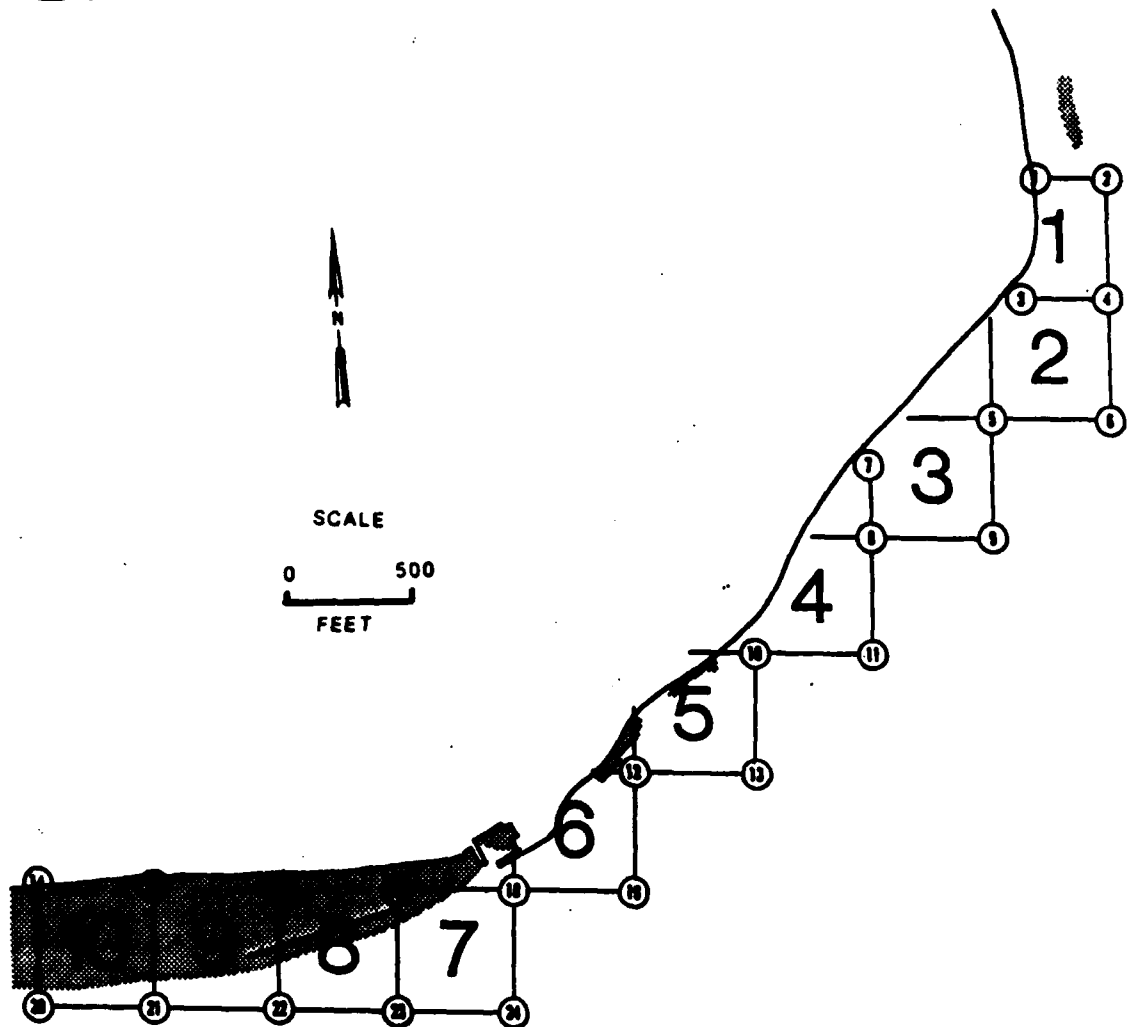
RUSSELL ISLAND



RUSSELL ISLAND



BELLE ISLE



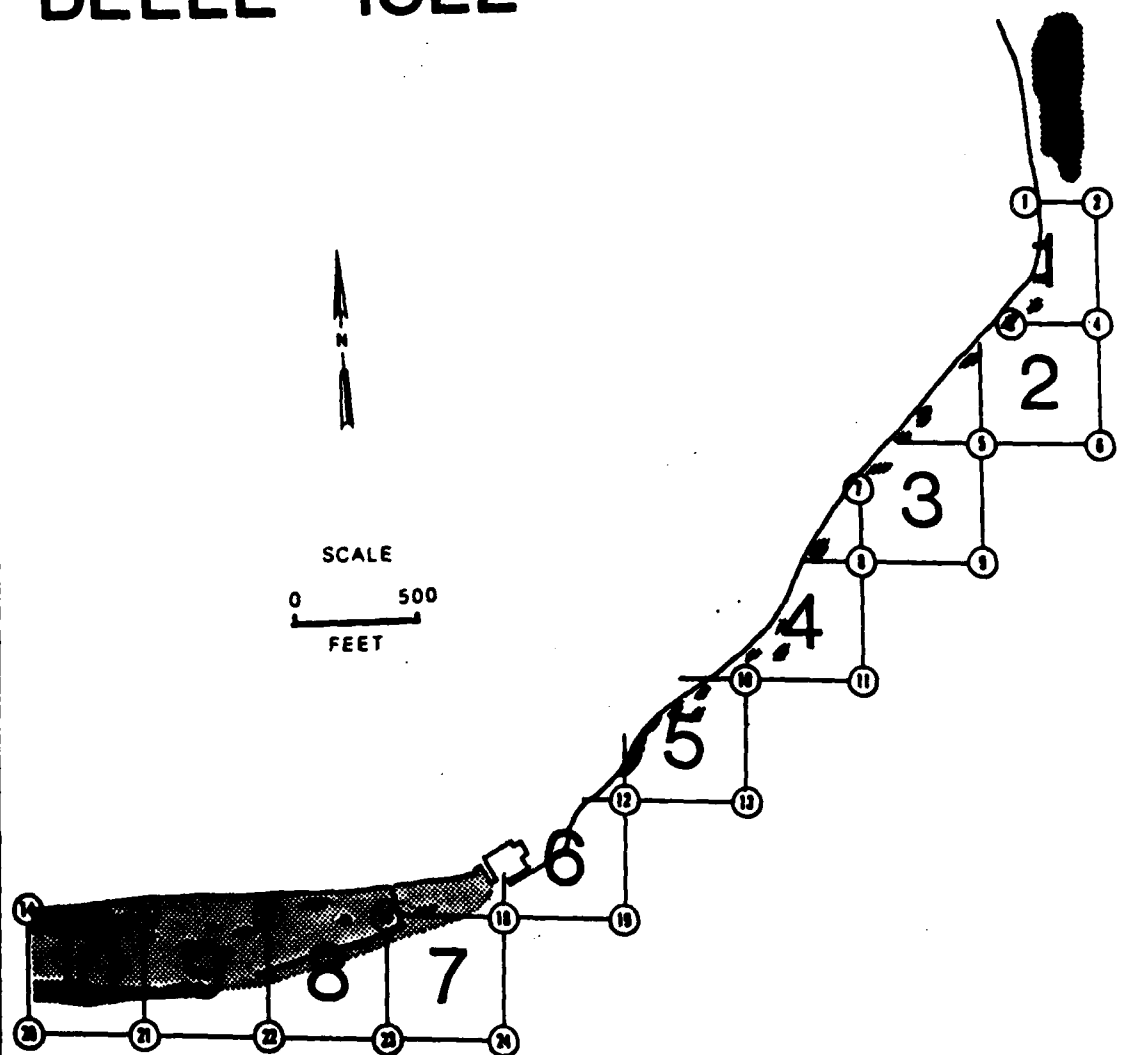
DETROIT
RIVER

JUNE 17, 1983

BELLE ISLE

FIG. 10

BELLE ISLE



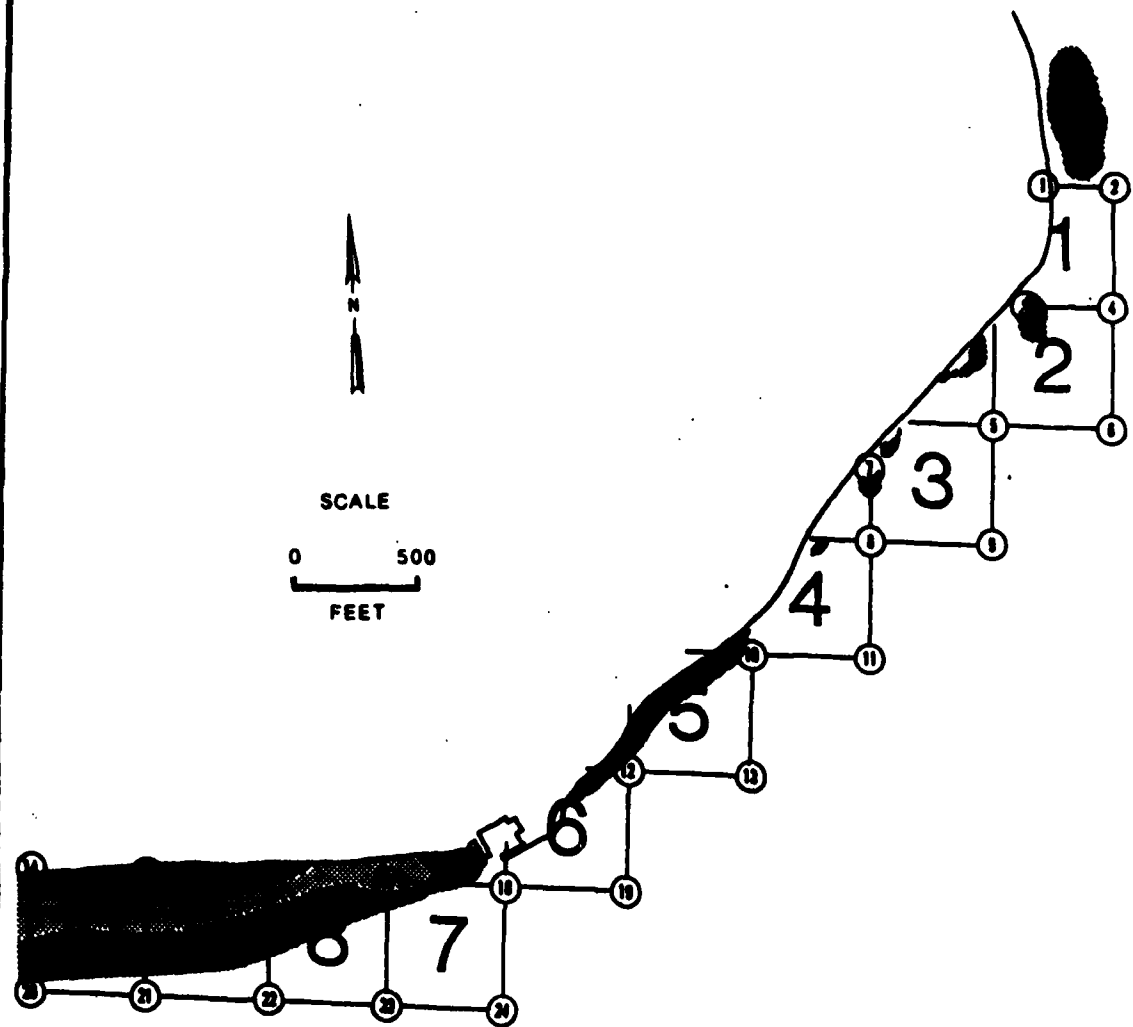
DETROIT
RIVER

AUGUST 13 1983

BELLE ISLE

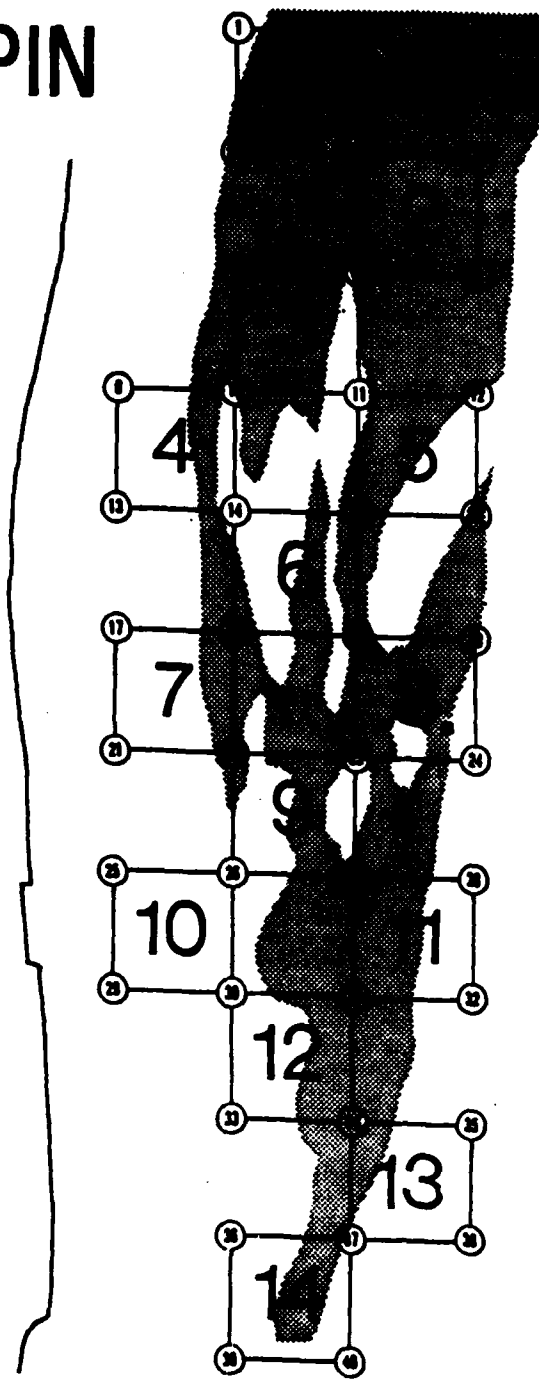
FIG. 11

BELLE ISLE



	DETROIT RIVER
	SEPTEMBER 24, 1983
	BELLE ISLE
	FIG. 12

PT. HENNEPIN



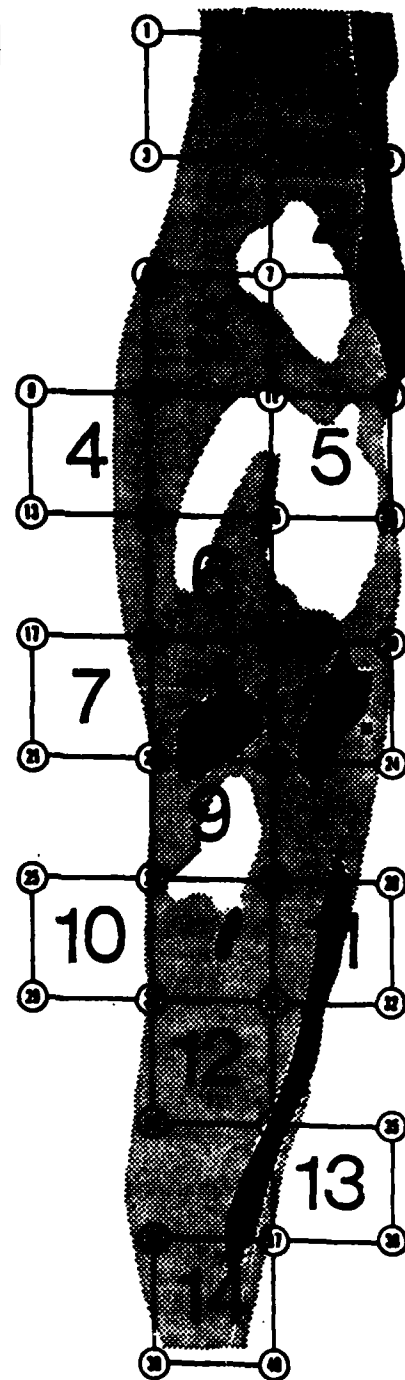
DETROIT
RIVER

JUNE 17, 1983

PT. HENNEPIN

FIG. 13

PT. HENNEPIN



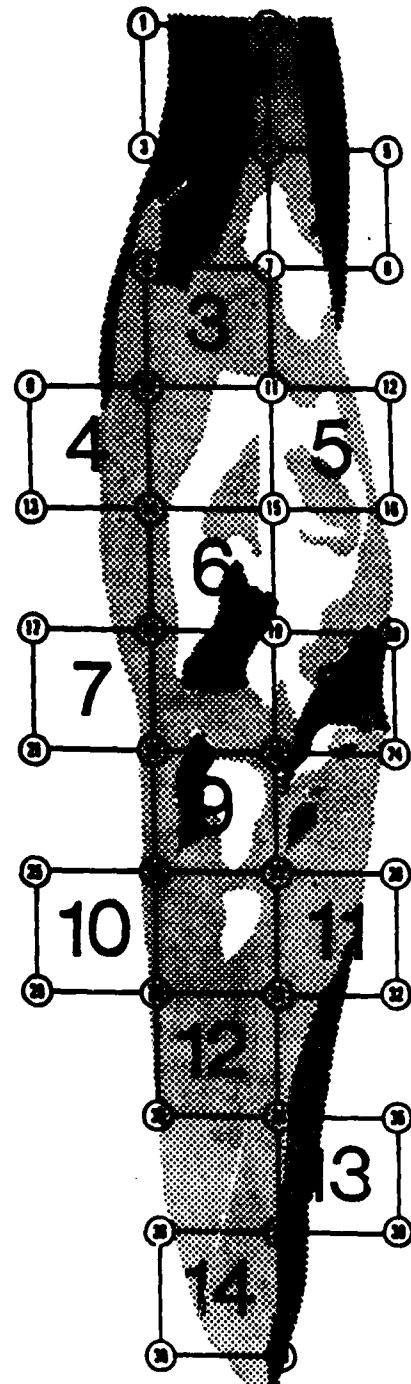
DETROIT
RIVER

AUGUST 13, 1983

PT. HENNEPIN

FIG. 14

PT. HENNEPIN



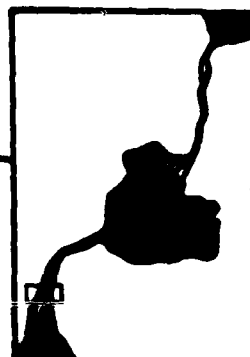
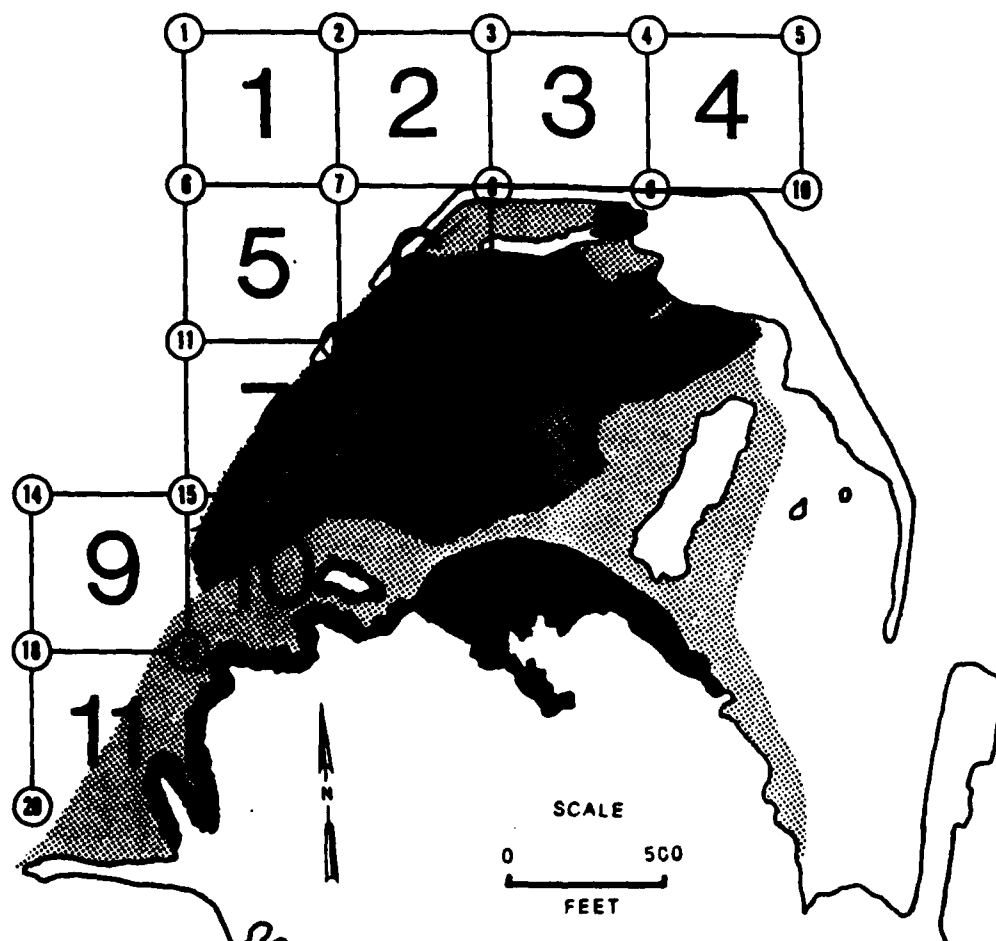
DETROIT
RIVER

SEPTEMBER 24, 1983

PT. HENNEPIN

FIG. 15

STONY ISLAND



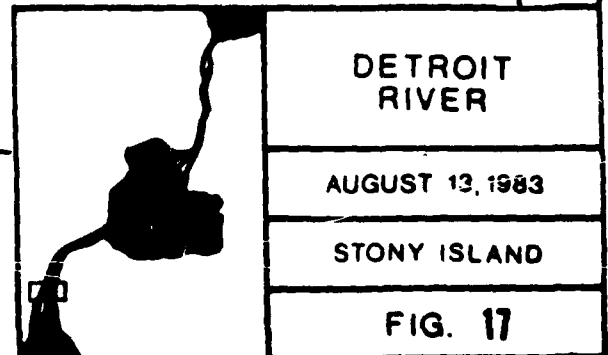
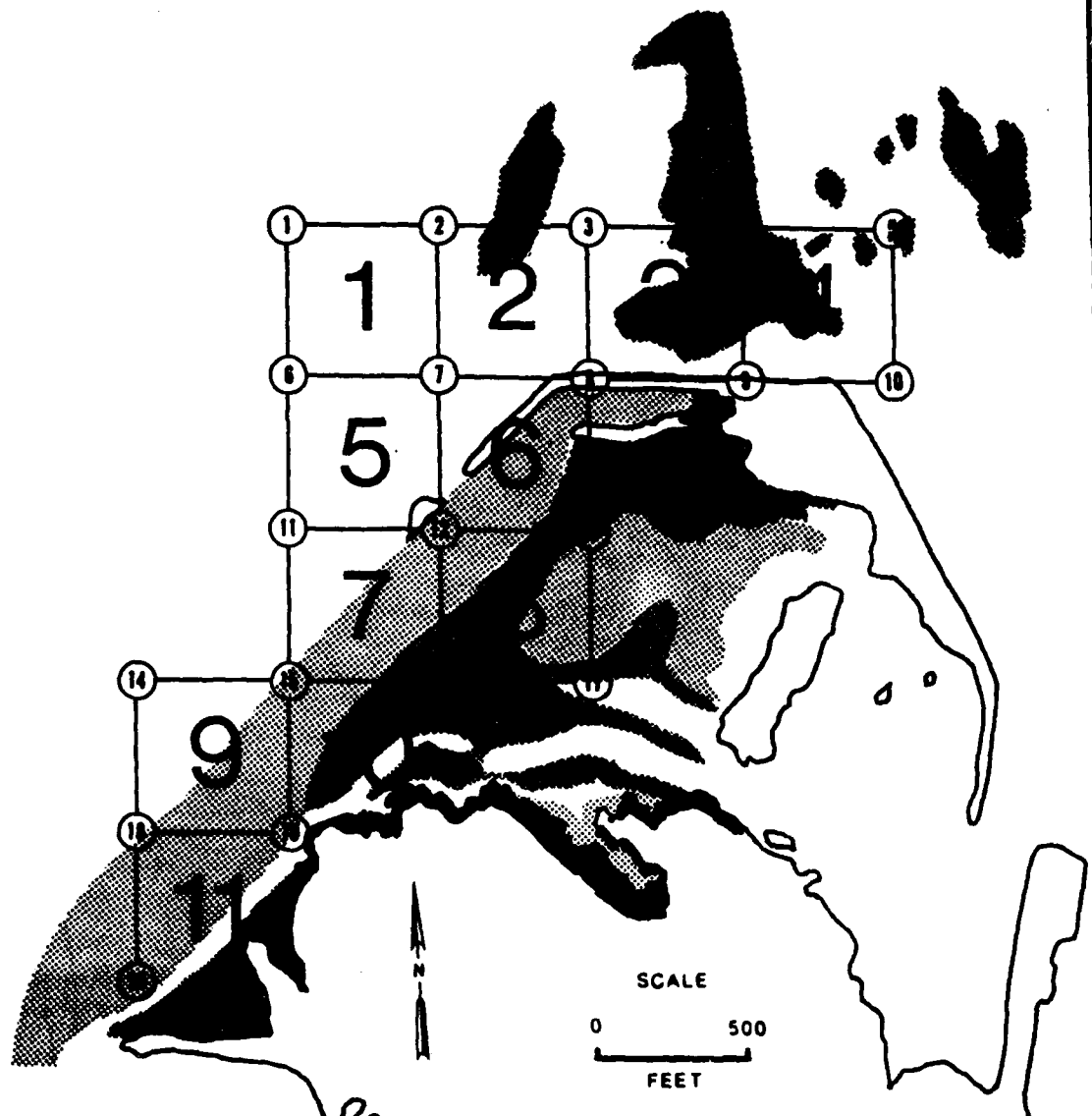
DETROIT
RIVER

JUNE 17, 1983

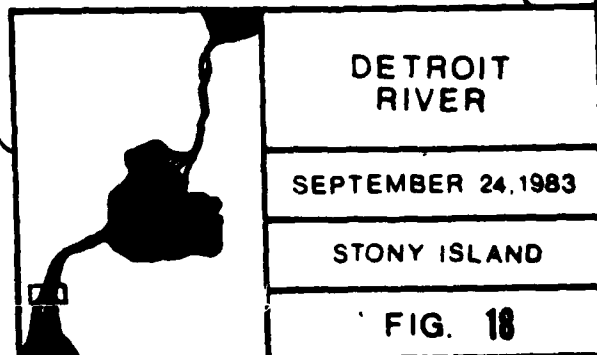
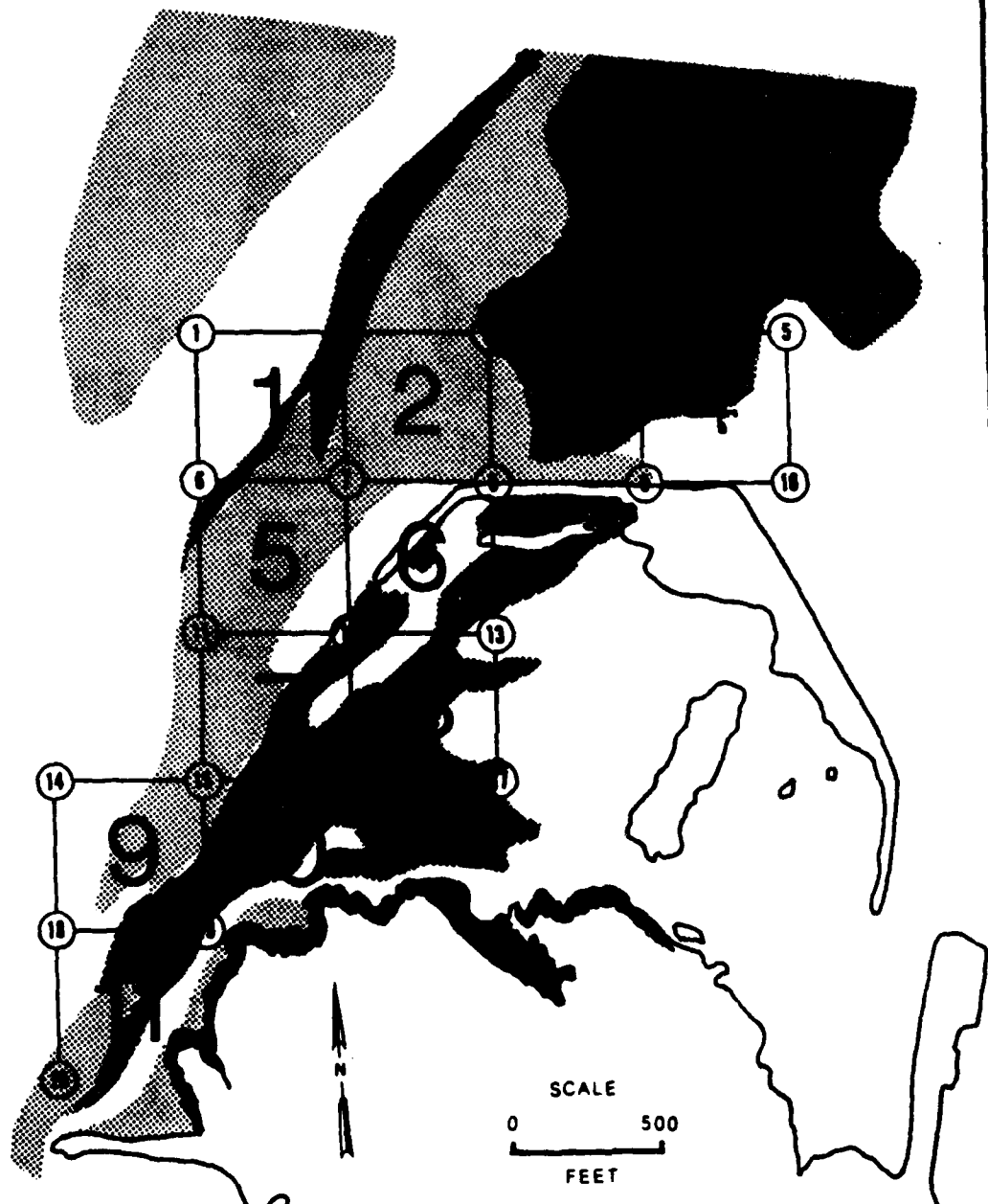
STONY ISLAND

FIG. 16

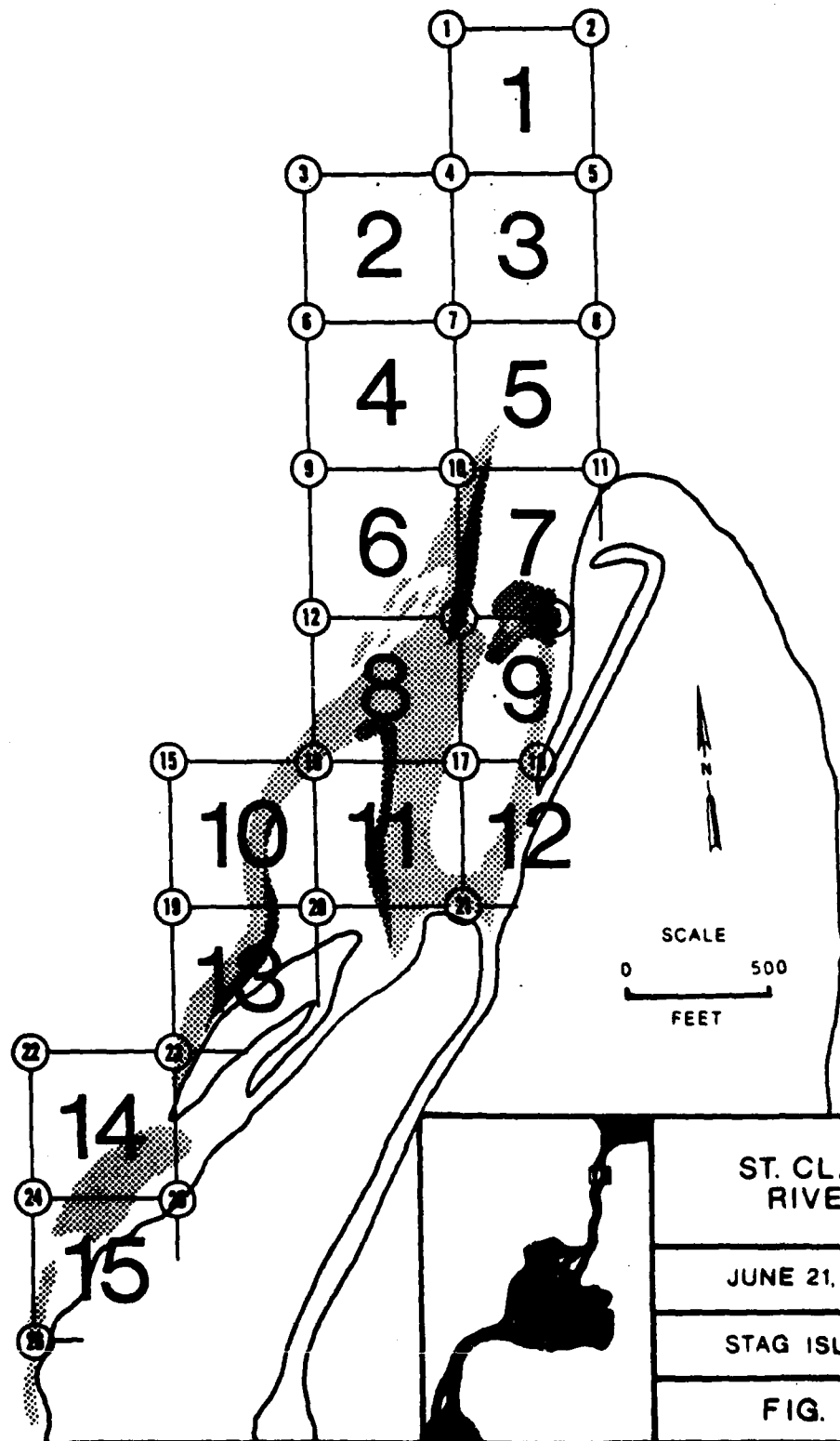
STONY ISLAND



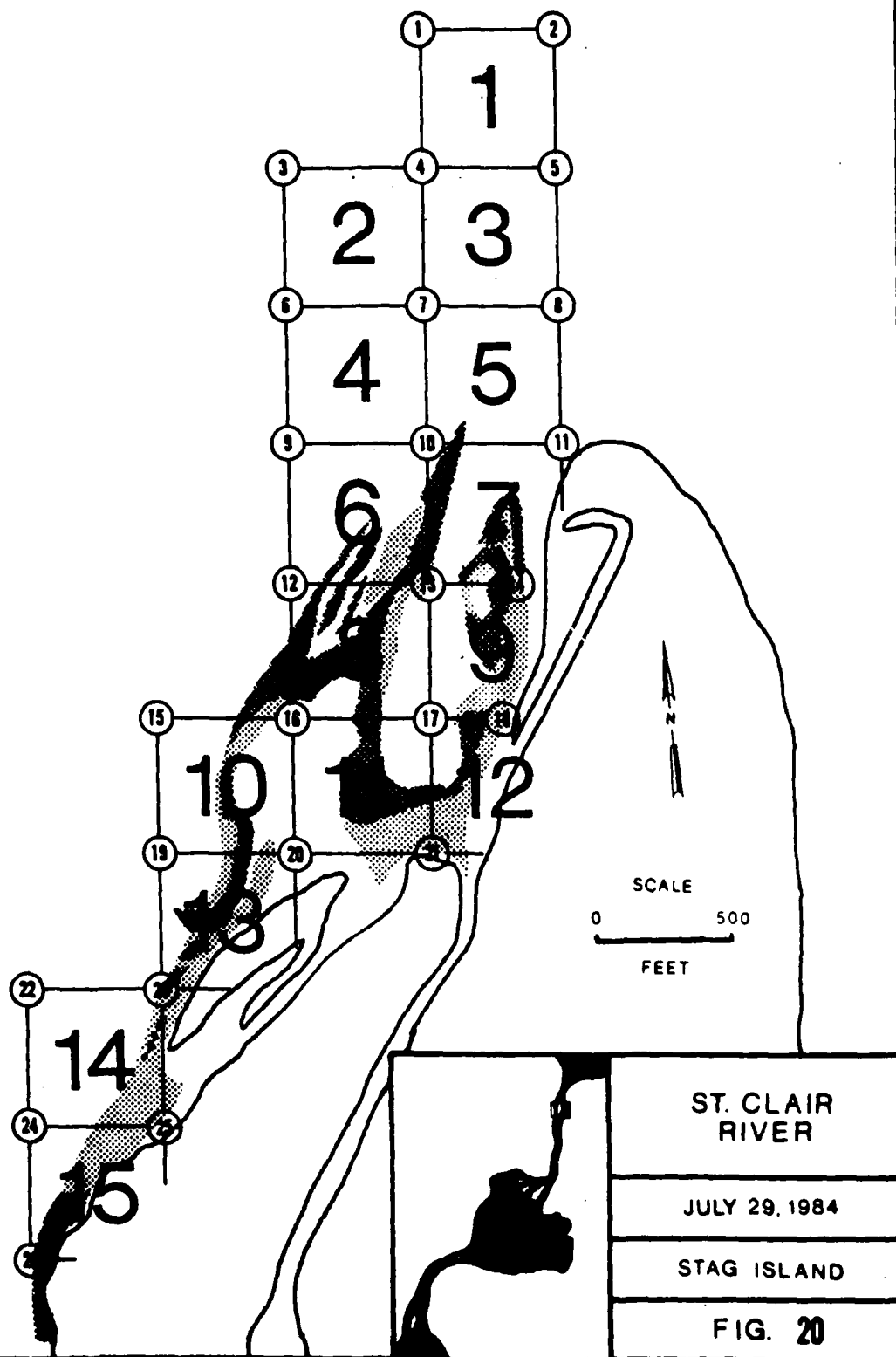
STONY ISLAND



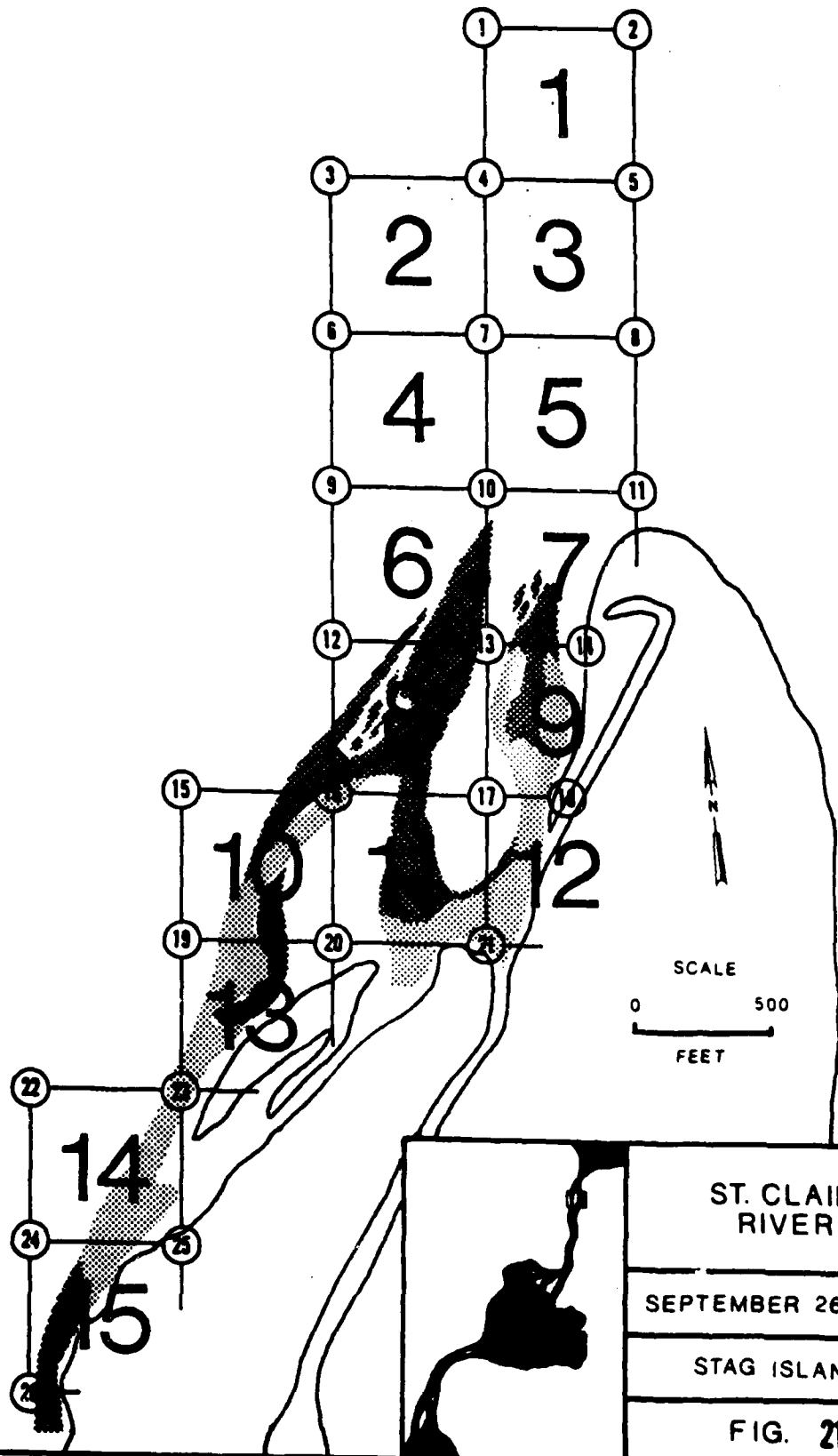
STAG ISLAND



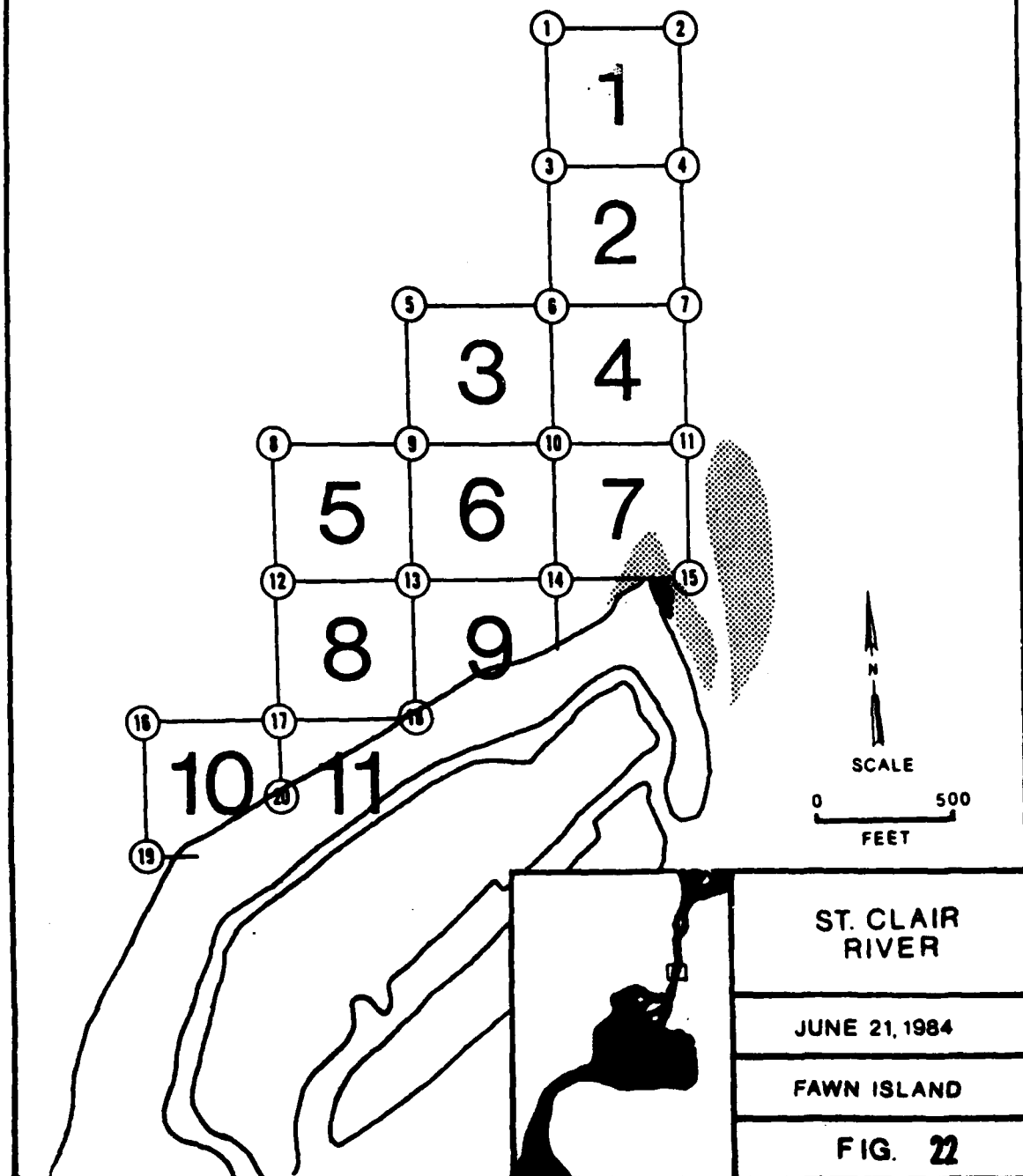
STAG ISLAND



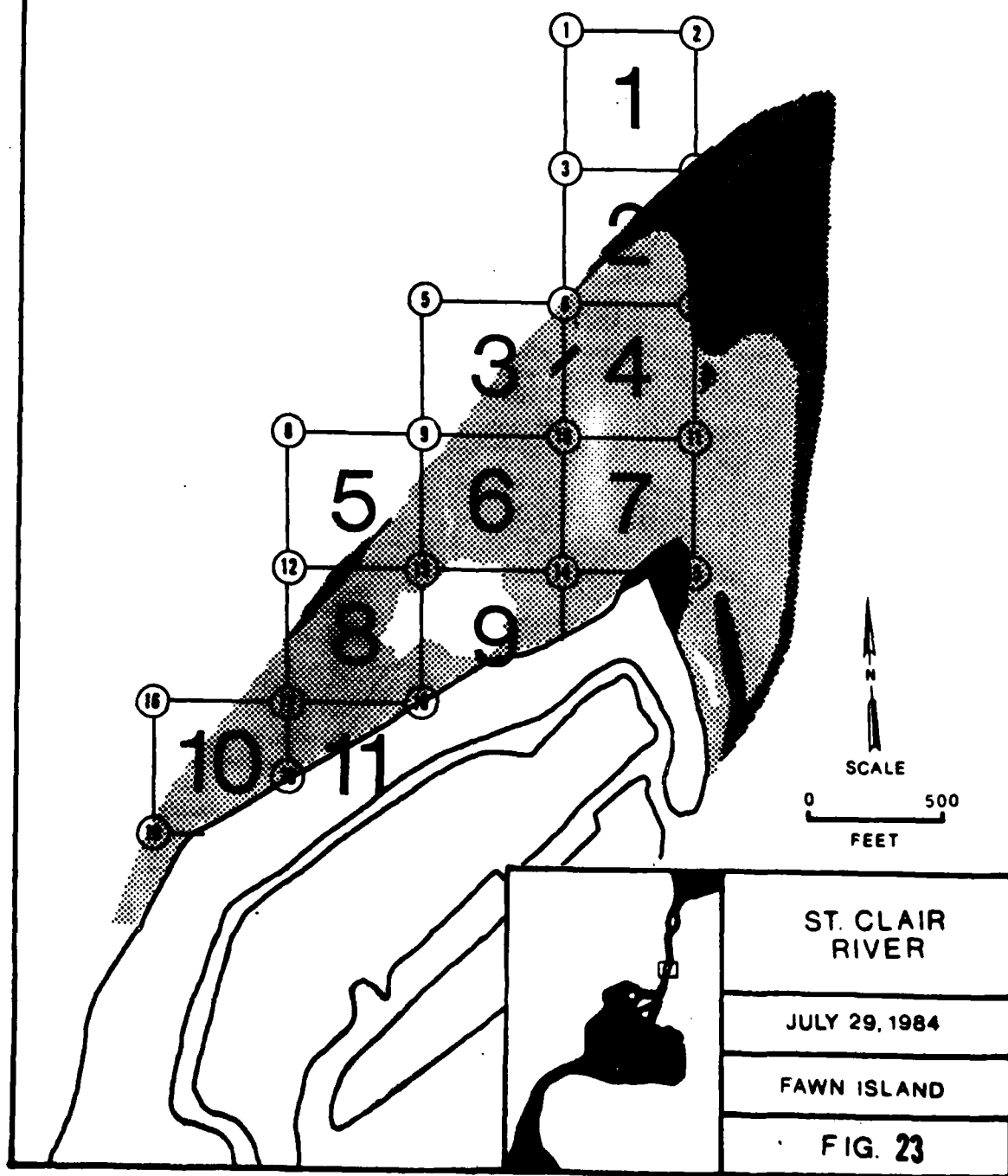
STAG ISLAND



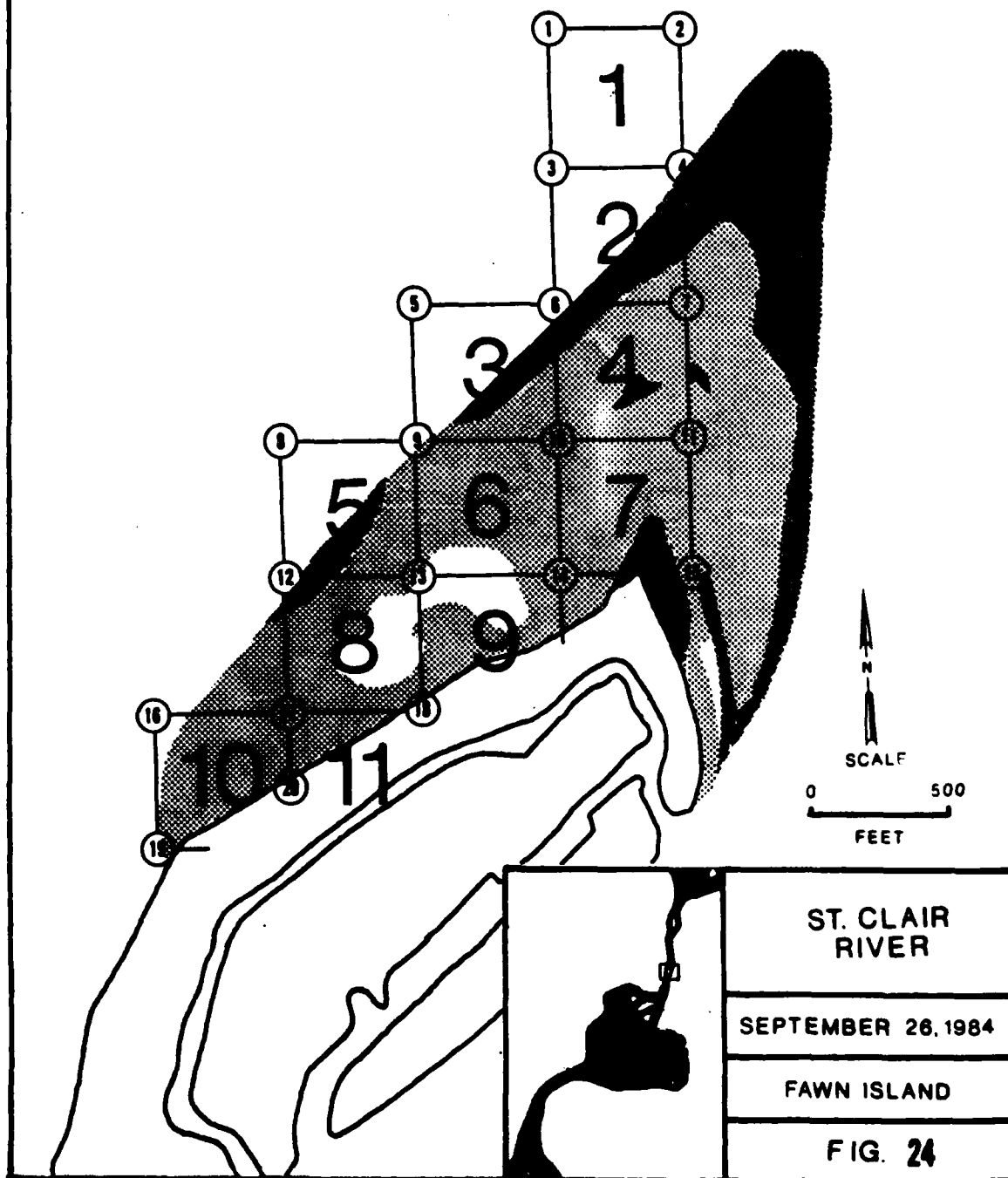
FAWN ISLAND



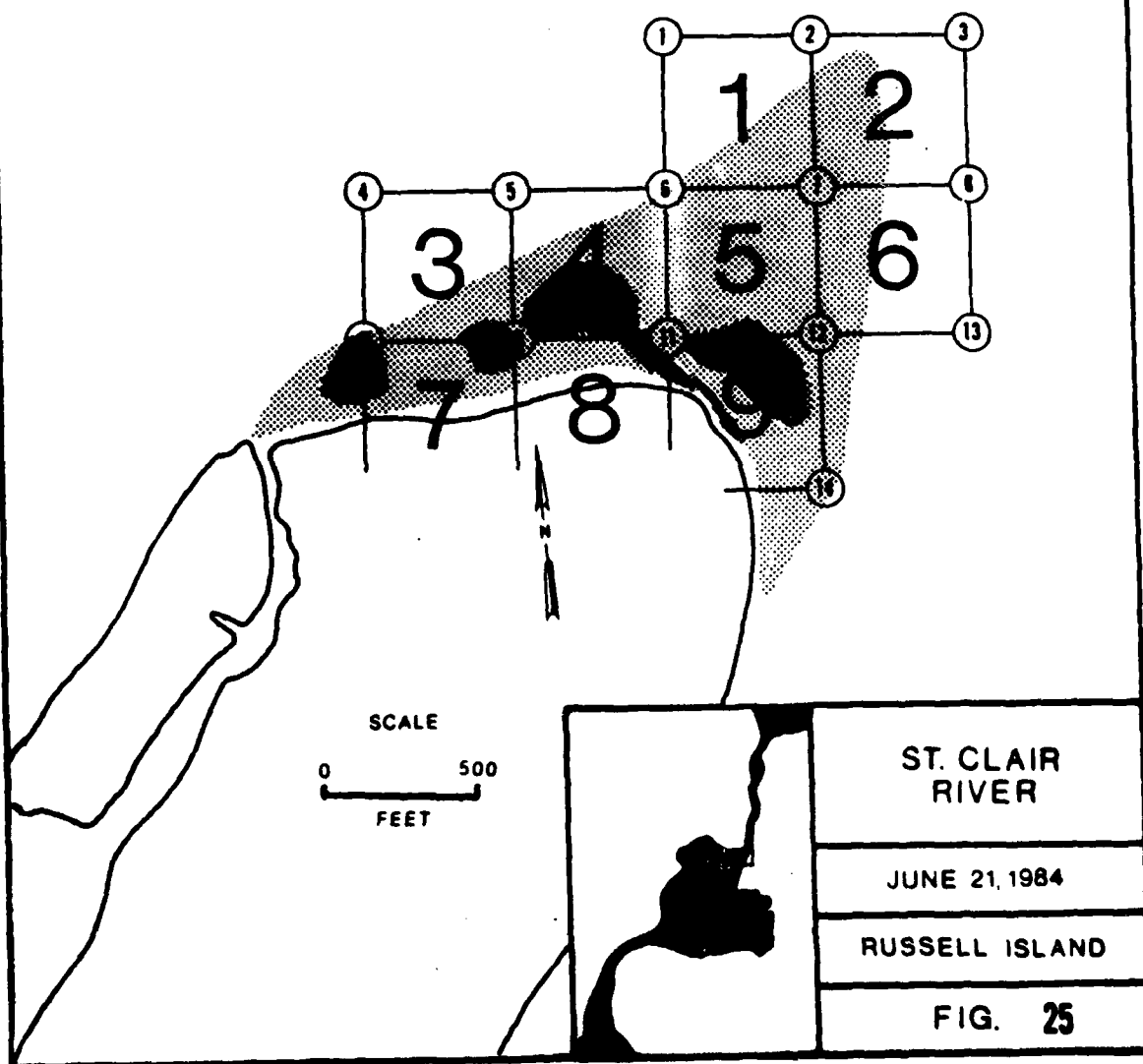
FAWN ISLAND



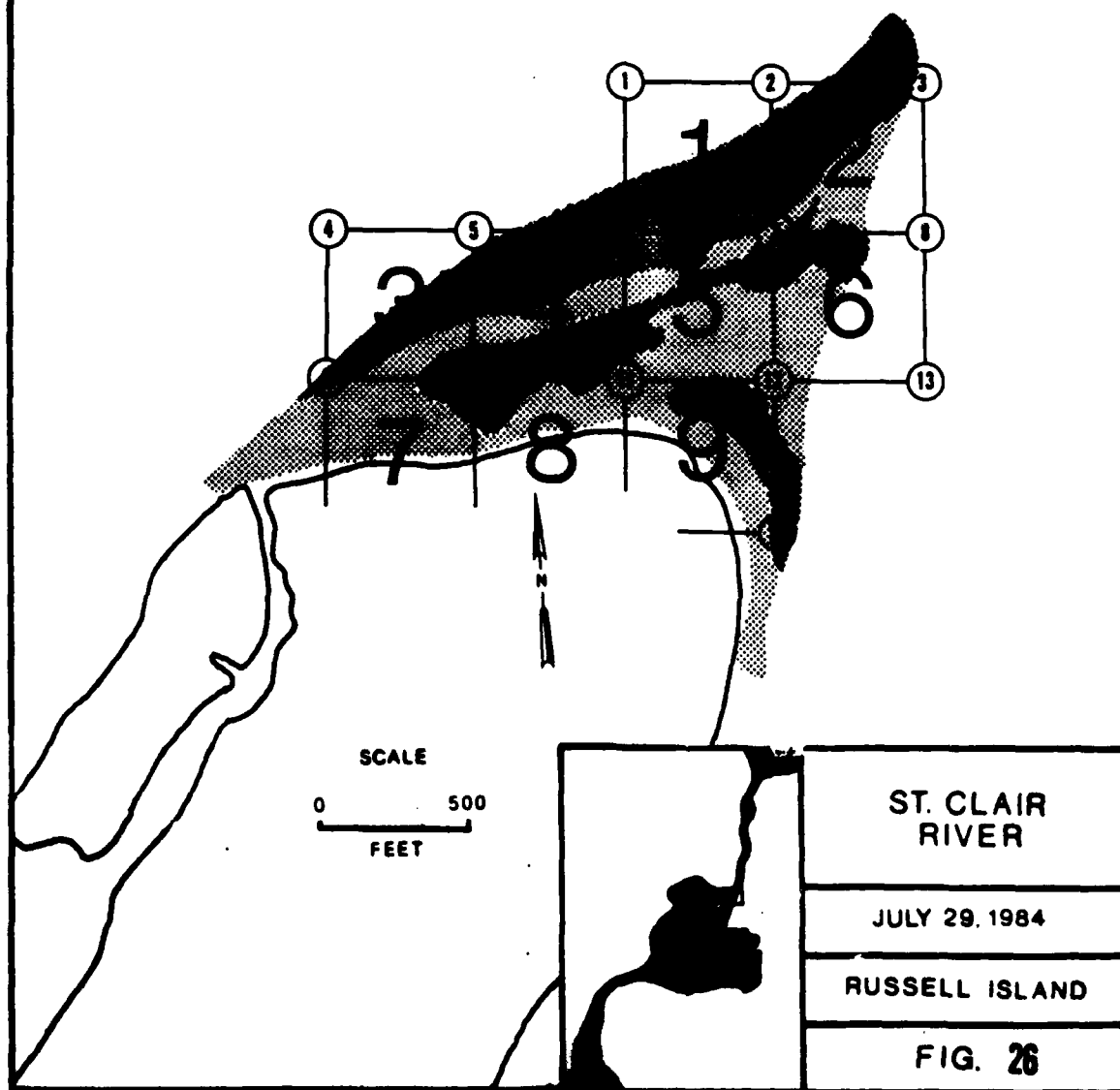
FAWN ISLAND



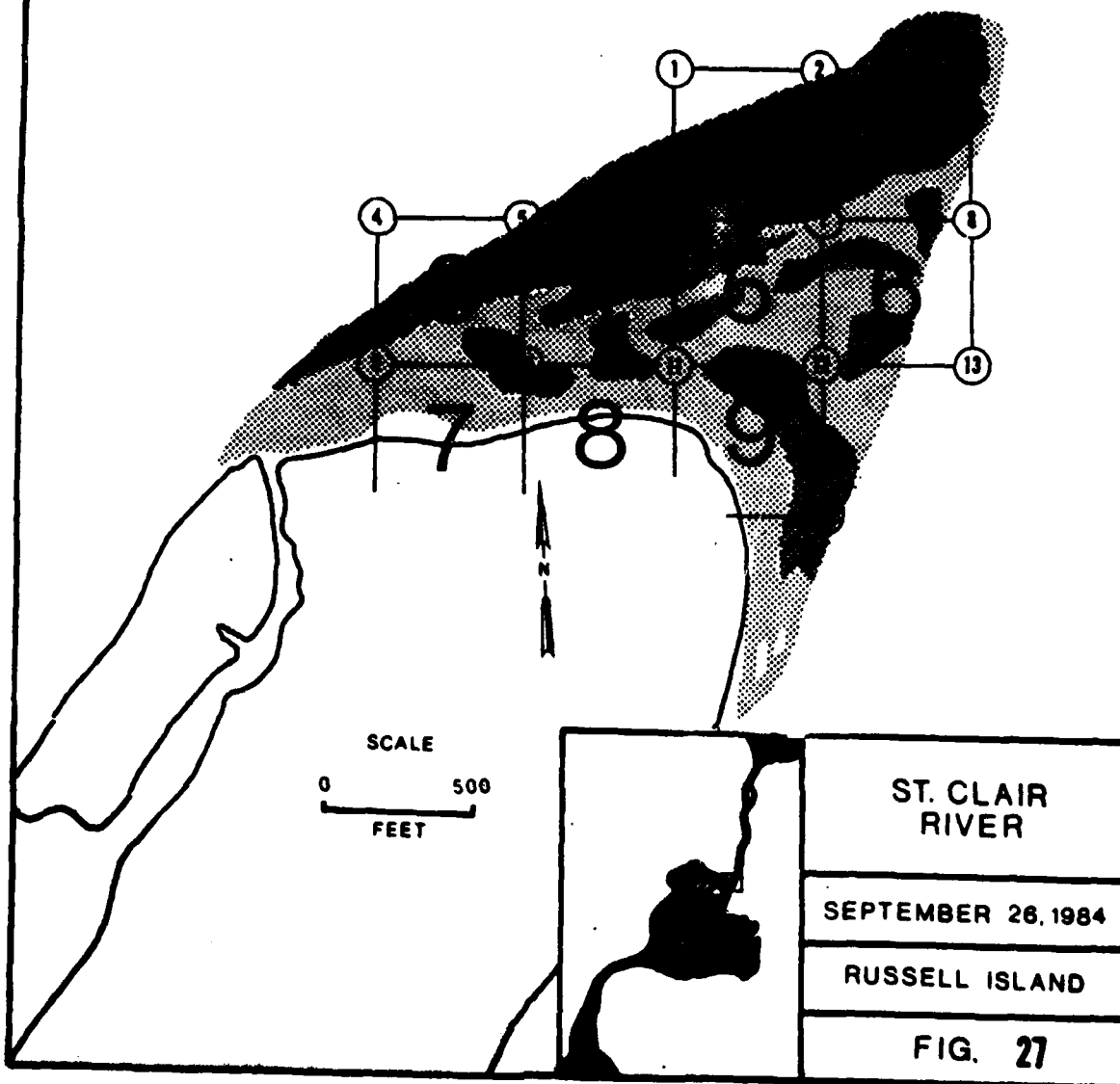
RUSSELL ISLAND



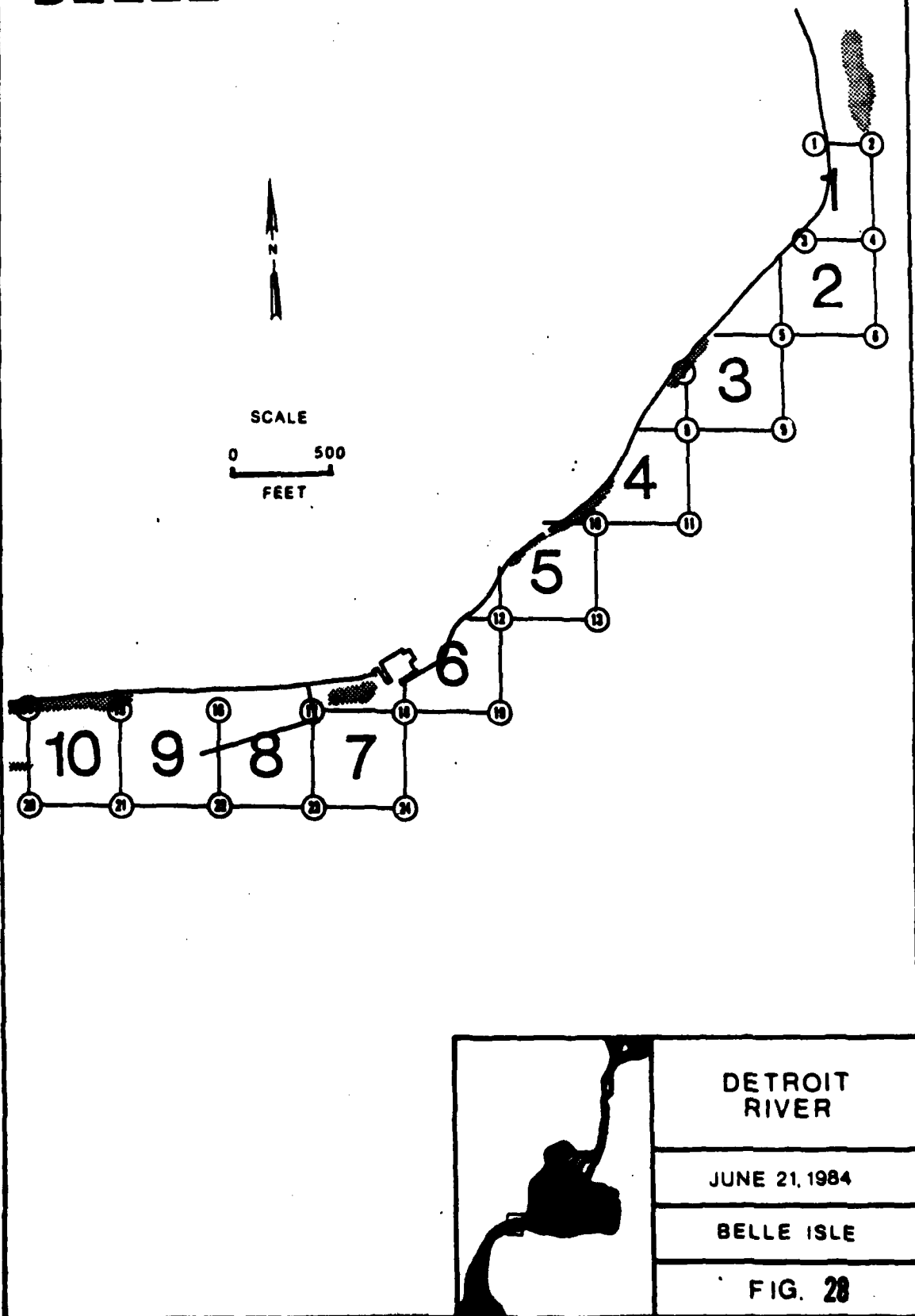
RUSSELL ISLAND



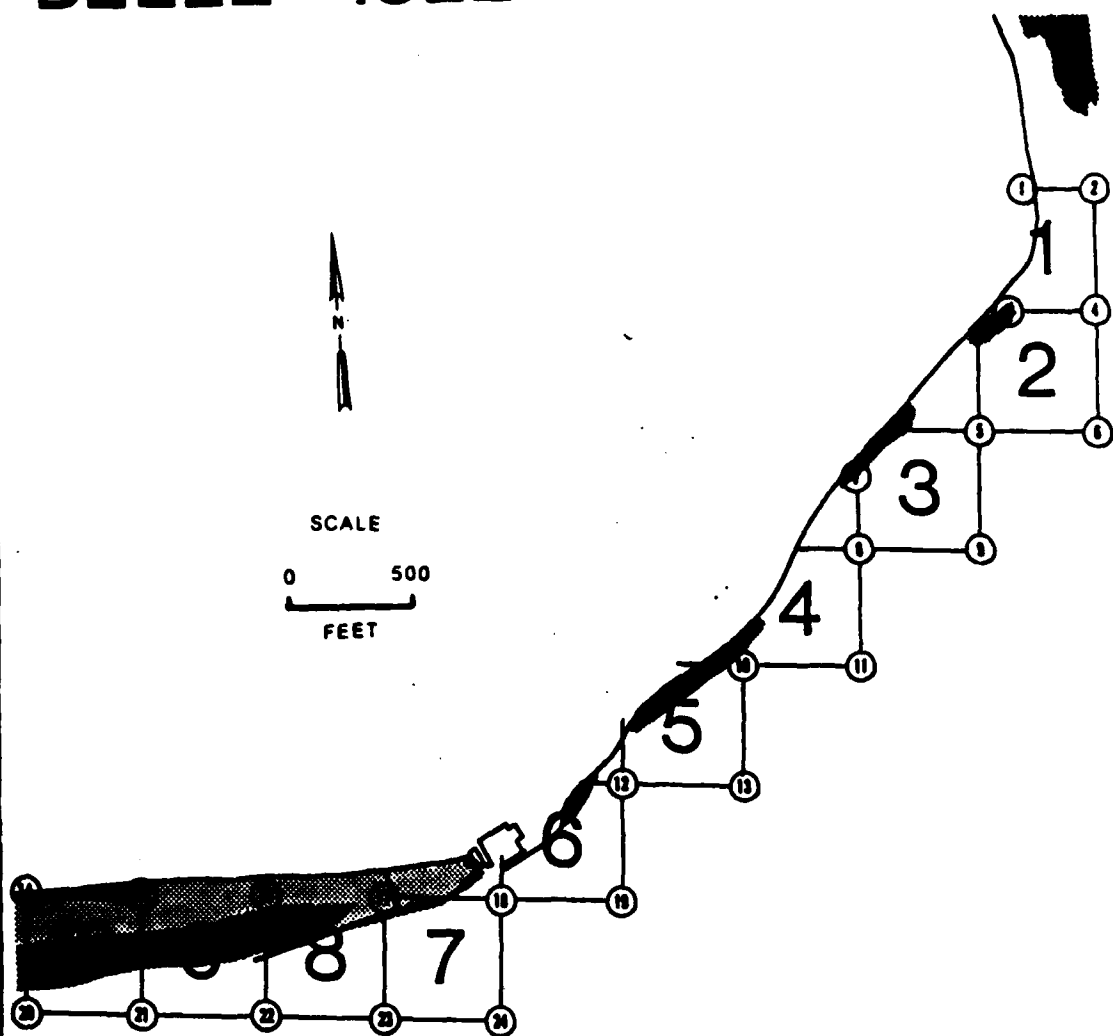
RUSSELL ISLAND



BELLE ISLE



BELLE ISLE



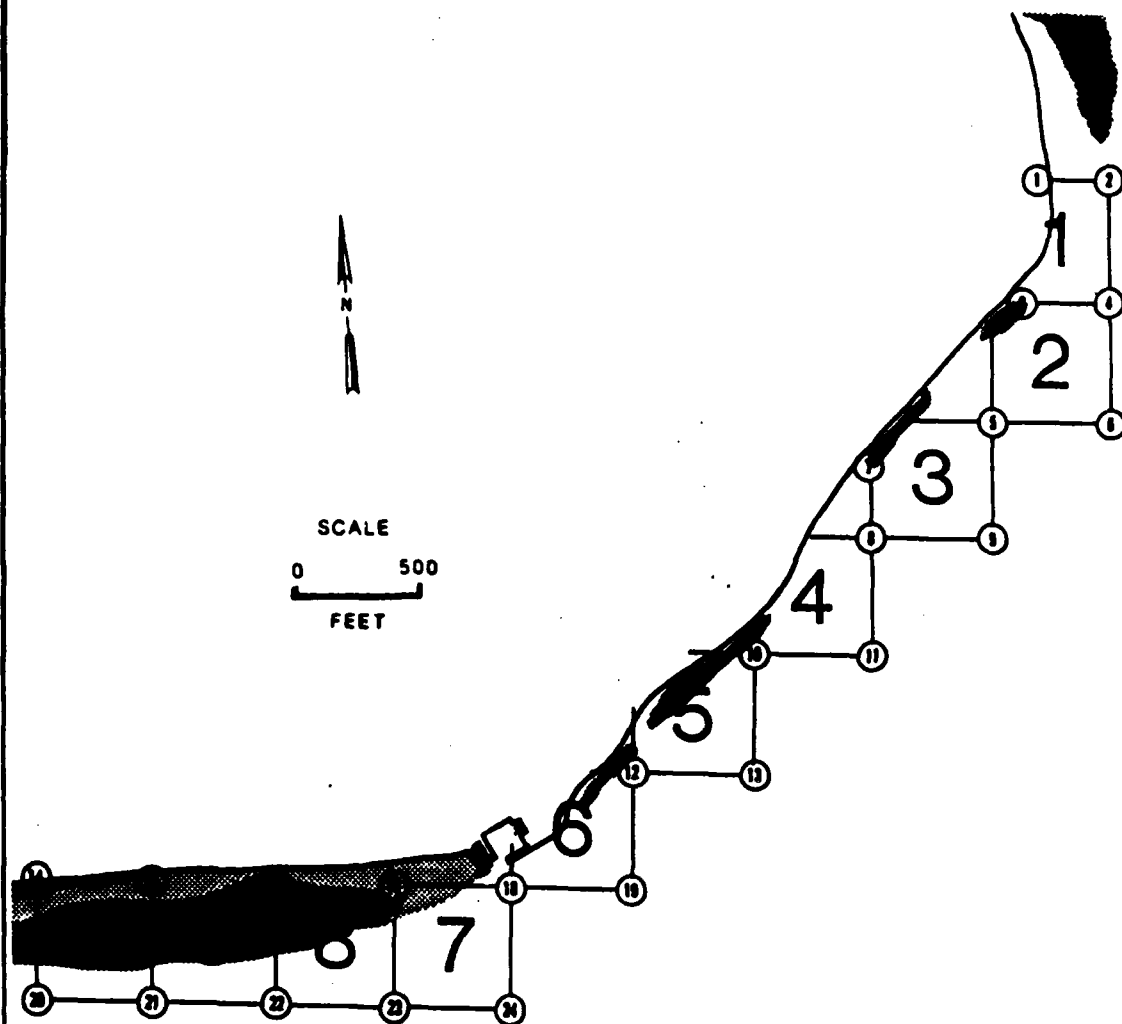
DETROIT
RIVER

JULY 29, 1984

BELLE ISLE

FIG. 29

BELLE ISLE



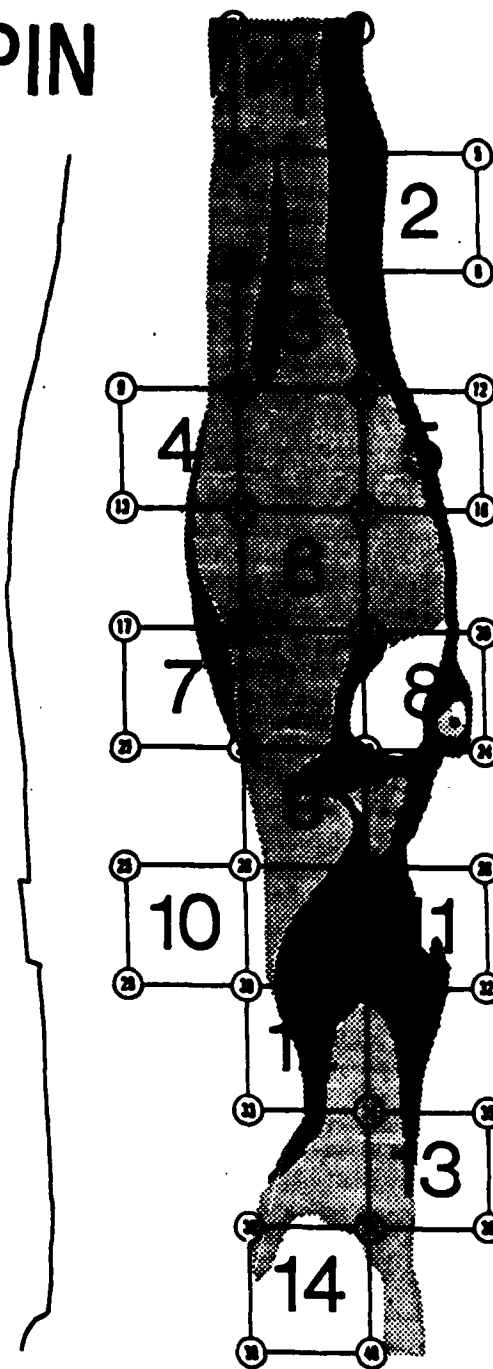
DETROIT
RIVER

SEPTEMBER 26, 1984

BELLE ISLE

FIG. 30

PT. HENNEPIN



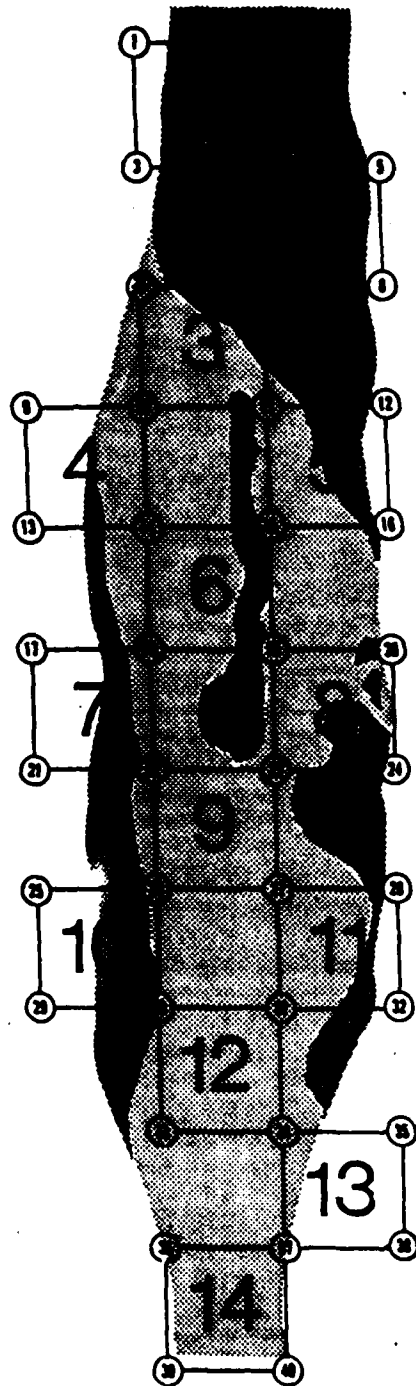
DETROIT
RIVER

JUNE 21, 1984

PT. HENNEPIN

FIG. 31

PT. HENNEPIN



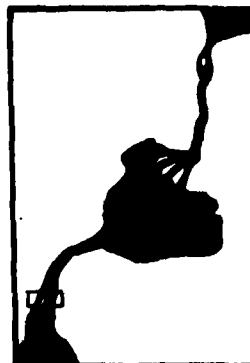
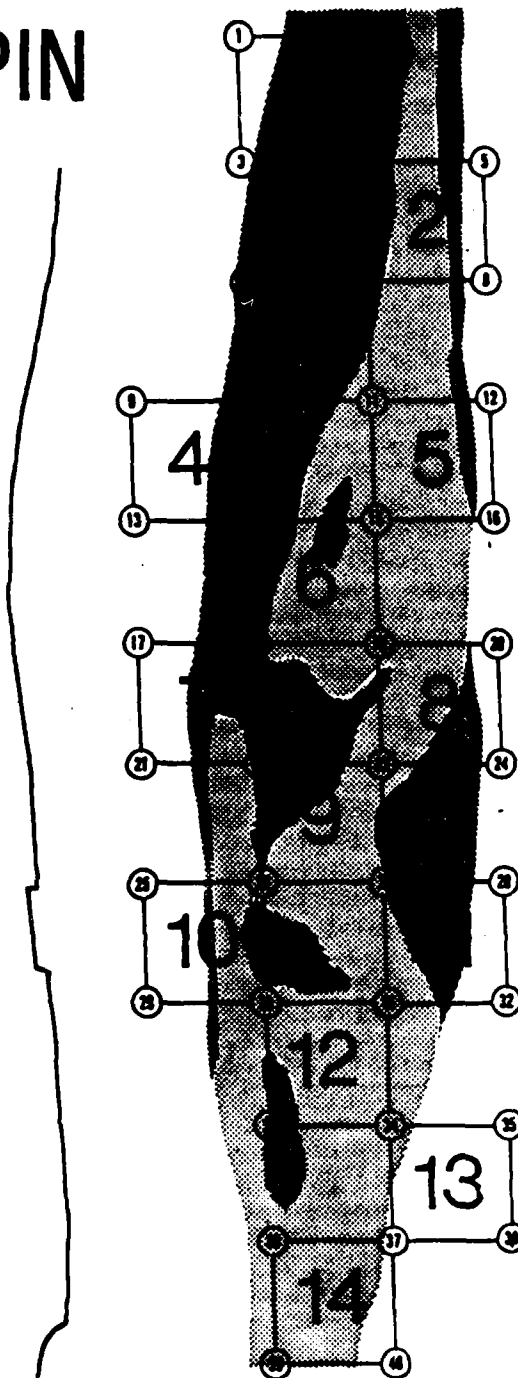
DETROIT
RIVER

JULY 29, 1984

PT. HENNEPIN

FIG. 32

PT. HENNEPIN



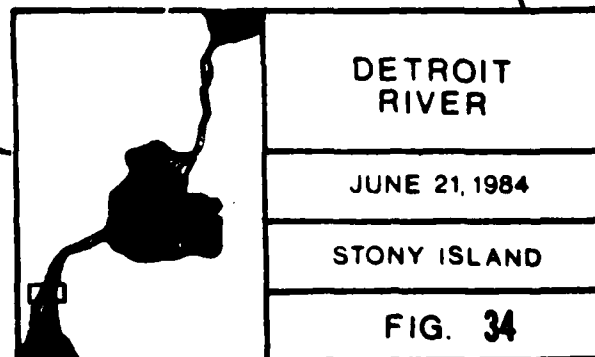
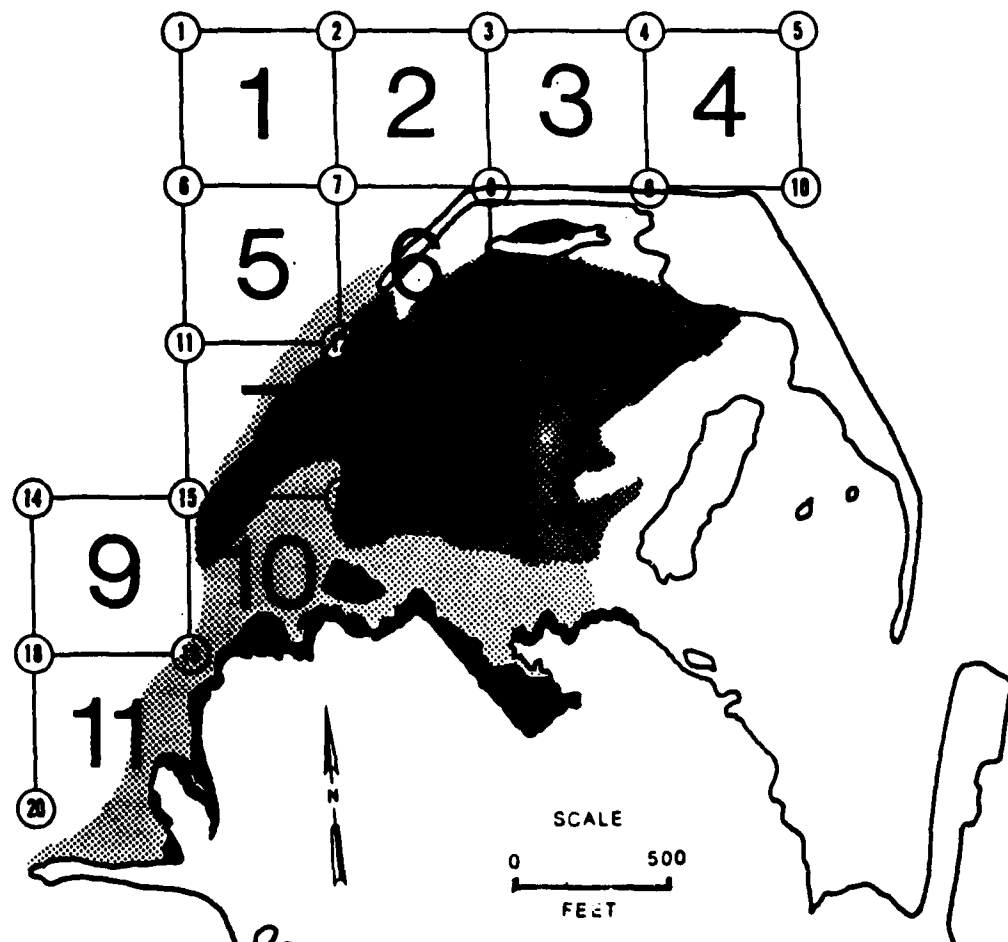
DETROIT
RIVER

SEPTEMBER 26, 1984

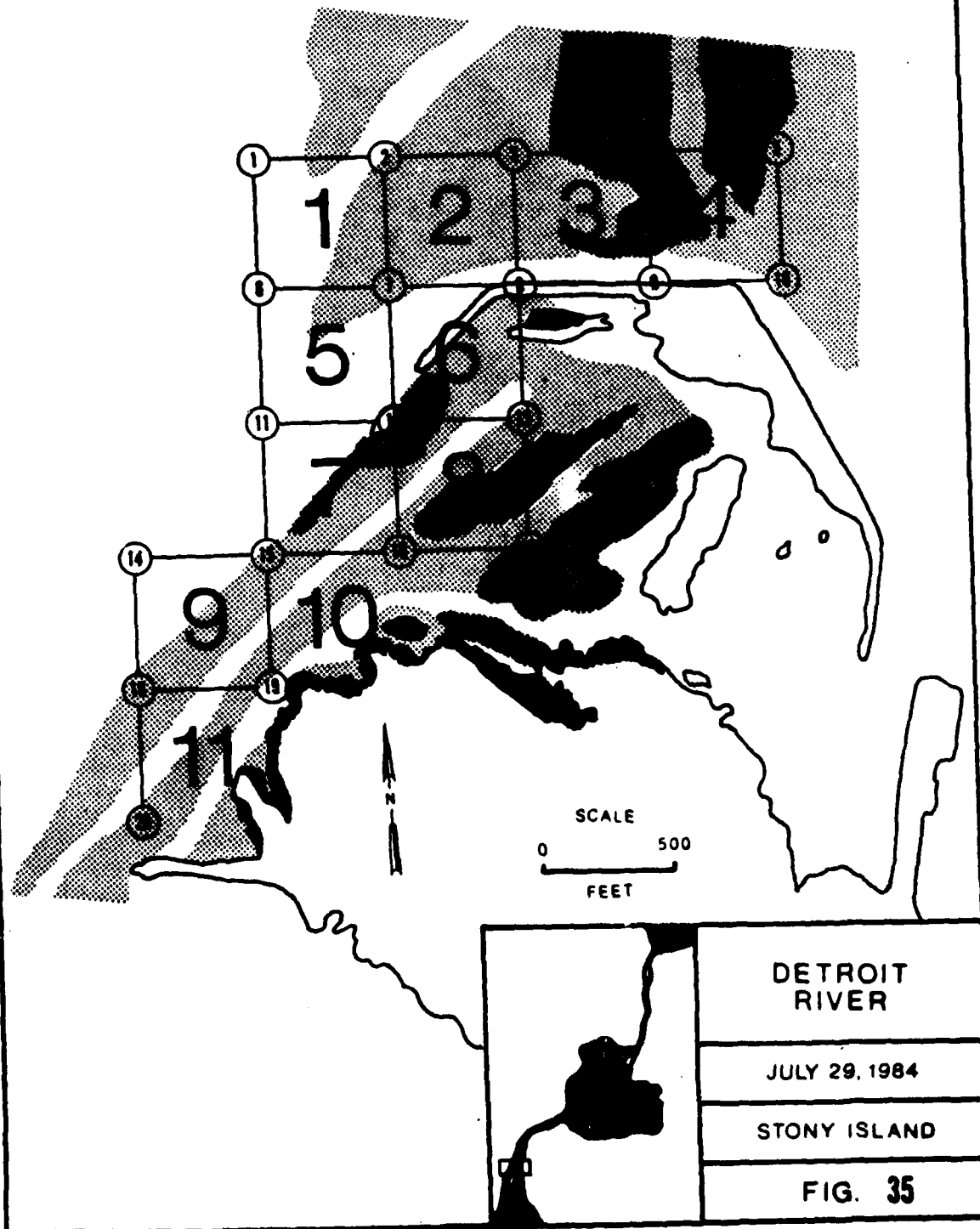
PT. HENNEPIN

FIG. 33

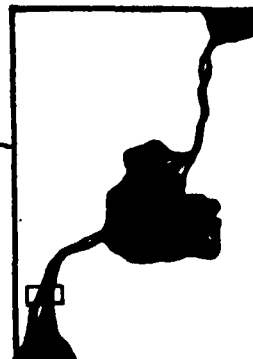
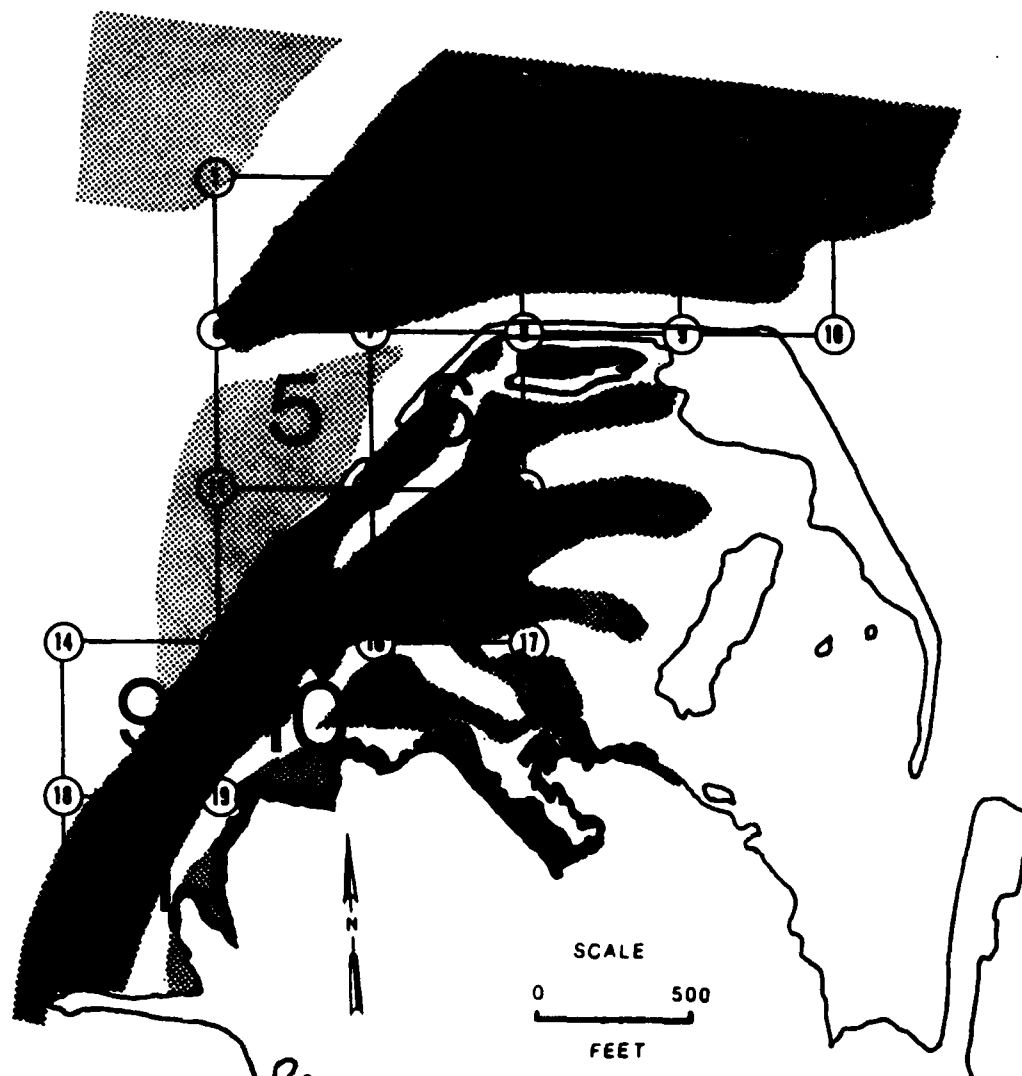
STONY ISLAND



STONY ISLAND



STONY ISLAND



DETROIT
RIVER

SEPTEMBER 26, 1984

STONY ISLAND

FIG. 36

APPENDIX P

ANOVA Tables for Macrophytes

ANALYSIS OF VARIANCE TABLES

LOCATION=STAG ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	RCCT EIC				
SCLPCE	CF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
PCCEL	85	5355.14757227	102.51177457	27.95	
ERROR	180	662.83176175	3.68239879		
CORRECTED TOTAL	265	5921.97933402			

SCLPCE	CF	ANOVA SS	F VALUE	PR	F
YEAR	1	35.08038701	5.53	C.CC23	
PCNTA	2	666.66556758	53.24	C.CCC1	
YEAR*PCNTA	2	221.01302638	31.37	C.CCC1	
STATION	14	5714.07126513	110.64	C.CCC1	
YEAR*STATION	14	701.18014105	13.40	C.CCC1	
PCNTA*STATION	28	1116.03300082	10.82	C.CCC1	
YEAR*PCNTA*STATION	28	675.12044427	6.55	C.CCC1	

PR	F	R-SQUARE	C.V.
C.CCC1	C.532515	25.6515	
RCCT MSE		ROOT BIO MEAN	
1.91895772		7.46524205	

LOCATION=FAHA ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	RCCT EIC				
SCLPCE	CF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
PCCEL	65	5355.51242122	82.06542187	11.47	
ERROR	122	556.11818124	7.24331955		
CORRECTED TOTAL	187	6255.63060246			

SCLPCE	CF	ANOVA SS	F VALUE	PR	F
YEAR	1	6.82288815	0.54	C.3332	
PCNTA	2	3410.10612146	225.40	C.CCC1	
YEAR*PCNTA	2	105.08658385	7.25	C.CCC1	
STATION	10	312.76674054	4.23	C.CCC1	
YEAR*STATION	10	301.22654107	4.16	C.CCC1	
PCNTA*STATION	20	790.09556182	5.45	C.CCC1	
YEAR*PCNTA*STATION	20	472.31155240	3.26	C.CCC1	

PR	F	R-SQUARE	C.V.
C.CCC1	C.845564	27.1018	
RCCT MSE		ROOT BIO MEAN	
2.69134159		5.93048577	

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ANALYSIS OF VARIANCE TABLES

LCCATTEN+RESSELL					
ANALYSIS OF VARIANCE PROCEEDURE					
DEPENDENT VARIABLE	RCCT EIC				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	92	4100.70693026	77.37182887	8.46	
ERROR	106	987.30108211	9.14167669		
CORRECTED TOTAL	161	5088.00801237			
SOURCE	DF	ANOVA SS	F VALUE	PR	F
YEAR	1	240.36193258	26.29	C.CCC1	
PCATH	2	1707.12185811	93.37	C.CCC1	
YEAR*PCATH	2	424.96054186	23.24	C.CCC1	
STATION	8	517.43524132	7.08	C.CCC1	
YEAR*STATION	8	428.57458379	6.00	C.CCC1	
PCATH*STATION	16	292.05813212	2.00	C.C189	
YEAR*PCATH*STATION	16	475.17420046	3.28	C.CCC1	
	PR	F	R-SQUARE	C.V.	
	C.CCC1	C.805555	26.2306		
	RCCT MSE		RCCT BIO MEAN		
	3.02352058		11.52669155		

LCCATTEN+BELLE					
ANALYSIS OF VARIANCE PROCEEDURE					
DEPENDENT VARIABLE	RCCT EIC				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	55	3337.81042962	56.57305830	14.36	
ERROR	120	472.85368492	3.93878070		
CORRECTED TOTAL	175	3810.66411454			
SOURCE	DF	ANOVA SS	F VALUE	PR	F
YEAR	1	7.40264050	1.08	C.1730	
PCATH	2	1146.15815793	145.50	C.CCC1	
YEAR*PCATH	2	240.03433606	30.47	C.CCC1	
STATION	8	1208.67012177	34.10	C.CCC1	
YEAR*STATION	8	82.46172419	2.35	C.C175	
PCATH*STATION	16	370.10486236	5.22	C.CCC1	
YEAR*PCATH*STATION	16	281.93855540	3.58	C.CCC1	
	PR	F	R-SQUARE	C.V.	
	C.CCC1	C.875555	21.5536		
	RCCT MSE		RCCT BIO MEAN		
	1.98462616		5.20785566		

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ANALYSIS OF VARIANCE TABLES

LOCATION=PTHERNEFIA

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	ACCT BIC				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	83	2225.28256227	26.65882629	5.31	
ERROR	168	850.17852742	5.06056647		
CORRECTED TOTAL	251	3075.46108970			

SOURCE	DF	ANOVA SS	F VALUE	PR	F
YEAR	1	1.25563369	0.26	C.6135	
MONTH	2	734.28052860	72.56	C.0001	
YEAR*MONTH	2	33.74086460	3.23	C.0380	
STATION	12	256.22580616	6.02	C.0001	
YEAR*STATION	12	201.25776017	3.06	C.0005	
MONTH*STATION	24	450.62536527	3.72	C.0001	
YEAR*MONTH*STATION	24	271.55216357	2.62	C.0001	
PR	F	R-SQUARE	C.V.		
	0.0001	0.723920	28.7364		
	ACCT MSE	ACCT BIC MEAN			
	2.24957473	7.62622252			

LOCATION=STLBY

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE	ACCT BIC				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	55	5142.17876619	87.15557231	10.55	
ERROR	120	550.55641217	4.58792010		
CORRECTED TOTAL	175	6122.12517836			

SOURCE	DF	ANOVA SS	F VALUE	PR	F
YEAR	1	48.93456467	5.92	C.0164	
MONTH	2	1209.06547674	72.21	C.0001	
YEAR*MONTH	2	16.45111287	1.00	C.3715	
STATION	9	2266.40056654	30.45	C.0001	
YEAR*STATION	9	212.47136617	2.87	C.0043	
MONTH*STATION	18	1127.82073346	7.55	C.0001	
YEAR*MONTH*STATION	18	259.55500270	1.75	C.0398	
PR	F	R-SQUARE	C.V.		
	0.0001	0.636427	25.2808		
	ACCT MSE	ACCT BIC MEAN			
	2.87365971	11.26656226			

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APPENDIX Q

Catch Data for Hoop Nets

Life stage designation as follows:

- 0 - fish in the first year of life (young-of-the-year);
- I - fish in the second year of life (yearlings);
- I+ - fish in the second or later year of life;
- II+ - fish in the third or later year of life.

[Note: by convention, fish are assumed to pass into the next year of life on January 1. All ages were derived from lengths, as reported by Trautman (1981).]

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION			FISH			
				Dominant Taxa	Density	Species	Life Stage	Total No.	Total Wt. (g)	Length Range (mm)
5/23/83	ST. CLAIR	STAG	1	CHARA SPP.	LOW	STRIPED SHINER	II+	2	13	82-92
			2	ELODEA CANADENS	MED.	NO FISH CAUGHT				
			3	NO VEGETATION	0	RAINBOW SMELT	I	1	22	110
						RAINBOW SMELT	II+	1	22	184
						BLUEGILL	II+	1	62	105
			4	NO VEGETATION	0	RAINBOW SMELT	I	16	230	109-151
						RAINBOW SMELT	II+	1	20	169
						TROUT PERCH	II+	1	17	128
						WHITE SUCKER	I+	1	840	457
						ROCKBASS	I	1	6	72
			1	CHARA SPP.	LOW	RAINBOW SMELT	I	1	2	66
			2	CHARA SPP.	LOW	NO FISH CAUGHT				
			3	NO VEGETATION	0	NO FISH CAUGHT				
			4	NO VEGETATION	0	NO FISH CAUGHT				
			1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	CHARA SPP.	LOW	SPOTTAIL SHINER	II+	20	200	88-109
						YELLOW PERCH	I	1	6	86
			4	CHARA SPP.	LOW	NO FISH CAUGHT				

APPENDIX
HOOPNET CATCH DATA

				VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	Dominant Taxa	Density	Species	Life Stage	Total No.	Total Wt. (g)	Length Range (mm)
5/25/83	DETROIT	BELLE	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	GIZZARD SHAD RAINBOW SMELT STONECAT EMERALD SHINER BLUEGILL YELLOW PERCH	I II+ II+ II+ II+ II+	1 14 1 1 1 1	9 36 220 7 15 30	106 71-86 260 94 84 133
			3	HETERANTHERA DUB	MED.	YELLOW PERCH YELLOW PERCH	I II+	1 3	8 113	88 107-175
			4	HETERANTHERA DUB	MED.	ROCKBASS ROCKBASS YELLOW PERCH	I II+ II+	2 1 1	31 250 41	88-92 220 153
		HENNEPIN	1	NO VEGETATION	0	SPOTTAIL SHINER HORNHEAD CHUB YELLOW PERCH	II+ I+ II+	6 1 2	70 18 68	95-125 112 144-146
			2	NO VEGETATION	0	ROCKBASS ROCKBASS YELLOW PERCH	I II+ II+	1 9 1	18 870 60	107 129-205 171
			3	HETERANTHERA DUB	LOW	YELLOW PERCH	II+	1	34	148
			4	HETERANTHERA DUB	LOW	NO FISH CAUGHT				
		STONY	1	POT. CRISPUS	HIGH	SPOTTAIL SHINER YELLOW PERCH	II+ II+	2 1	21 44	94-102 157
			2	POT. CRISPUS	HIGH	RAINBOW SMELT SPOTTAIL SHINER ROCKBASS ROCKBASS YELLOW PERCH	I II+ I II+ II+	1 2 3 4 10	1 31 41 163 283	135 97-128 41-106 124-185 118-165
			3	NO VEGETATION	0	ROCKBASS	II+	4	245	144-231
			4	NO VEGETATION	0	RAINBOW SMELT RAINBOW SMELT SPOTTAIL SHINER YELLOW PERCH	I II+ II+ II+	2 1 2 1	30 15 23 69	115-127 166 97-110 176

APPENDIX
HOOPNET CATCH DATA

HOOPNET CATCH DATA

VEGETATION

FISH

DATE	RIVER	LOCATION	STA. NO.	Dominant Taxa	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	WT. (G)	LENGTH RANGE (MM)
6/20/83	ST. CLAIR	STAG	1	CHARA SPP.	LOW	NO FISH CAUGHT				
			2	NO VEGETATION	0	BLUEGILL	II+	1	118	183
			3	CHARA SPP.	LOW	RAINBOW SMELT STRIPED SHINER ROCKBASS	I II+ II+	1 4 1	6 36 250	111 84-97 213
			4	NO VEGETATION	0	RAINBOW SMELT STRIPED SHINER HORNHEAD CHUB	I II+ I+	4 10 1	49 95 40	125-143 82-86 142
		FAWN	1	POT. RICHARDSONI	LOW	RAINBOW SMELT HORNHEAD CHUB YELLOW PERCH YELLOW PERCH	I I+ I II+	1 10 58 1	9 168 451 37	123 97-128 77-105 114
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	POT. NARROW	LOW	NO FISH CAUGHT				
			4	NO VEGETATION	0	RAINBOW SMELT TROUT PERCH WHITE SUCKER YELLOW PERCH	I II+ I+ I	2 1 1 1	8 10 840 9	61-117 113 440 90
		RUSSELL	1	POT. NARROW	LOW	HORNHEAD CHUB	I+	1	15	100
			2	NO VEGETATION	0	HORNHEAD CHUB ROCKBASS ROCKBASS YELLOW PERCH YELLOW PERCH	0 I II+ I II+	1 2 2 1 4	10 47 172 5 190	87 97-98 113-180 65 125-179
			3	POT. NARROW	LOW	BOWFIN STRIPED SHINER ROCKBASS LARGEMOUTH BASS YELLOW PERCH YELLOW PERCH	I+ II+ I 0 I II+	1 4 1 1 1 1	1400 66 9 14 9 35	532 90-123 78 98 90 137
			4	NO VEGETATION	0	MOTTLED SCULPIN	I+	1	6	71

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	FISH		
								TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
6/27/83	DETROIT	BELLE	1	NO VEGETATION	O	ROCKBASS	I	9	111	61-98
						ROCKBASS	II+	5	263	115-151
						ROCKBASS	I	4	43	59-85
						ROCKBASS	II+	3	162	117-159
		HENNEPIN	1	POT. CRISPUS	LOW	NO FISH CAUGHT				
						ROCKBASS	II+	1	150	191
						ROCKBASS	I	1	150	191
						ROCKBASS	II+	1	150	191
		STONY	1	POT. CRISPUS	HIGH	WHITE PERCH	I	1	8	85
						FRESHWATER DRUM	II+	1	680	373
						ROCKBASS	II+	1	170	199
						YELLOW PERCH	I	2	26	96-100
		STONY	2	NO VEGETATION	O	CARP	I+	1	3400	620
						ROCKBASS	II+	3	600	209-225
						YELLOW PERCH	I	1	11	97
						YELLOW PERCH	I	1	11	97
		STONY	3	POT. CRISPUS	HIGH	CARP	I+	1	1300	448
						BLACK REDHORSE	I+	1	900	448
						ROCKBASS	I	1	18	88
						ROCKBASS	II+	1	100	161
		STONY	4	NO VEGETATION	O	STONECAT	I	1	54	75
						WHITE PERCH	I	6	324	138-169
						WHITE PERCH	II+	1	103	209
						WHITE BASS	I	1	206	158
		STONY	4	NO VEGETATION	O	WHITE BASS	II+	4	1021	241-283
						SPOTTAIL SHINER	II+	1	14	107
						ROCKBASS	I	1	23	102
						ROCKBASS	II+	1	120	174

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	VEGETATION		FISH			
					DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
7/25/83	ST. CLAIR	STAG	1	CHARA SPP.	LOW	YELLOW PERCH	I	1	8	94
			2	NO VEGETATION	0	YELLOW PERCH	I	1	13	101
			3	NO VEGETATION	0	NO FISH CAUGHT				
			4	POT. PRAELONGIS	MED.	NO FISH CAUGHT				
			1	POT. PRAELONGIS	MED.	ALEWIFE	I	1	16	122
						SPOTTAIL SHINER	II+	1	9	96
						HORNHEAD CHUB	I+	1	26	126
						ROCKBASS	I	1	27	107
						ROCKBASS	II+	4	215	110-132
						YELLOW PERCH	II+	2	36	113-118
			2	NO VEGETATION	0	ROCKBASS	II+	3	344	128-210
			3	NO VEGETATION	0	ALEWIFE	I	1	15	118
						YELLOW PERCH	II+	3	253	130-235
			4	POT. PRAELONGIS	MED.	HORNHEAD CHUB	I	6	138	94-128
						ROCKBASS	II+	2	196	123-170
						YELLOW PERCH	I	50	583	81-108
						YELLOW PERCH	II+	23	657	111-189
			1	POT. PRAELONGIS	MED.	HORNHEAD CHUB	I+	7	101	97-133
						ROCKBASS	I	1	11	73
						YELLOW PERCH	I	6	68	86-106
						YELLOW PERCH	II+	4	165	120-175
			2	NO VEGETATION	0	ROCKBASS	II+	18	1324	105-218
						YELLOW PERCH	I	10	110	86-107
						YELLOW PERCH	II+	13	536	110-190
			3	NO VEGETATION	0	HORNHEAD CHUB	I+	21	346	81-132
						ROCKBASS	II+	6	600	128-180
						YELLOW PERCH	I	14	158	90-106
						YELLOW PERCH	II+	21	1449	111-210
			4	POT. PRAELONGIS	MED.	COMMON SHINER	II+	1	13	106
						HORNHEAD CHUB	O	1	10	86
						HORNHEAD CHUB	I+	23	323	91-132
						ROCKBASS	I	1	19	96
						ROCKBASS	II+	4	860	142-245
						PUMPKINSEED	II+	1	60	131
						YELLOW PERCH	I	18	211	92-109
						YELLOW PERCH	II+	20	1269	113-212

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION			FISH			
				Dominant Taxa	Density	Species	Life Stage	Total No.	Total Wt. (g)	Length Range (mm)
8/ 1/83	DETROIT	BELLE	1	VALLISNERIA AMER	HIGH	YELLOW PERCH	I	8	89	91-106
						YELLOW PERCH	II+	1	12	110
			2	NO VEGETATION	0	ROCKBASS	I	3	43	83-102
						ROCKBASS	II+	6	697	120-240
						BLUEGILL	II+	1	30	118
						YELLOW PERCH	II+	4	256	110-202
			3	MYRIO. EXALBESC	MED.	ROCKBASS	I	1	19	100
						ROCKBASS	II+	1	216	210
						WHITE CRAPPIE	II+	1	150	205
						YELLOW PERCH	I	7	69	99-109
						YELLOW PERCH	II+	5	78	115-122
			4	NO VEGETATION	0	ROCKBASS	I	1	7	82
						ROCKBASS	II+	6	816	112-220
						YELLOW PERCH	II+	1	11	110
		HENNEPIN	1	HETERANTHERA DUB	HIGH	CHANNEL CATFISH	II+	2	870	255-380
						ROCKBASS	II+	3	190	110-174
						YELLOW PERCH	I	10	138	101-109
						YELLOW PERCH	II+	21	834	111-195
			2	NO VEGETATION	0	SPOTTAIL SHINER	II+	8	77	97-111
						ROCKBASS	II+	1	40	126
						YELLOW PERCH	I	5	61	96-106
						YELLOW PERCH	II+	11	254	110-273
			3	VALLISNERIA AMER	HIGH	ROCKBASS	II+	1	56	143
						YELLOW PERCH	I	3	31	83-102
						YELLOW PERCH	II+	2	33	113-115
			4	NO VEGETATION	0	YELLOW PERCH	II+	4	167	114-187

APPENDIX
HOOPNET CATCH DATA

				VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	Dominant Taxa	Density	Species	Life Stage	Total No.	Total Wt. (g)	Length Range (mm)
8/ 1/83	DETROIT	STONY	1	MYRIO. EXALBESC	HIGH	YELLOW BULLHEAD	II+	1	190	234
						BROWN BULLHEAD	II+	1	195	257
						YELLOW PERCH	II+	1	141	221
			2	NO VEGETATION	0	HORNHEAD CHUB	I+	2	45	103-134
						ROCKBASS	II+	1	29	114
			3	MYRIO. EXALBESC	MED.	CHANNEL CATFISH	II+	1	220	280
						BLACK REDHORSE	I+	1	530	383
						HORNHEAD CHUB	I+	4	78	87-131
						ROCKBASS	I	3	43	66-104
			4	NO VEGETATION	0	ROCKBASS	II+	2	258	149-210
						CHANNEL CATFISH	II+	1	680	343
						HORNHEAD CHUB	I+	1	21	116
						ROCKBASS	I	1	25	102
						ROCKBASS	II+	3	399	180-190
						YELLOW PERCH	I	1	11	96

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION		DENSITY	SPECIES	LIFE STAGE	FISH		LENGTH RANGE (MM)
				DOMINANT TAXA	NO. VEGETATION				TOTAL NO.	TOTAL WT. (G)	
9/ 6/83	ST. CLAIR	STAG	1	NO VEGETATION	0	WHITE SUCKER	WHITE SUCKER	I+	1	16	118
						HORNHEAD CHUB	HORNHEAD CHUB	O	2	18	86- 89
						HORNHEAD CHUB	HORNHEAD CHUB	I	27	383	95-126
						YELLOW PERCH	YELLOW PERCH	I	33	319	76-108
			2	POT. PRAELONGIS	MED.	YELLOW PERCH	YELLOW PERCH	II+	14	489	110-215
						YELLOW PERCH	YELLOW PERCH	I	2	24	103-105
						YELLOW PERCH	YELLOW PERCH	II+	1	200	226
						YELLOW PERCH	YELLOW PERCH	II+	1	200	226
			3	NO VEGETATION	0	NORTHERN PIKE	NORTHERN PIKE	I+	1	1500	610
						WHITE SUCKER	WHITE SUCKER	O	2	18	97-100
						WHITE SUCKER	WHITE SUCKER	I+	1	20	128
						ROCKBASS	ROCKBASS	II+	2	74	123-130
			4	POT. RICHARDSONI	MED.	BLACK CRAPPIE	BLACK CRAPPIE	II+	1	120	198
						SPOTTAIL SHINER	SPOTTAIL SHINER	II+	1	10	112
						HORNHEAD CHUB	HORNHEAD CHUB	I+	10	178	109-126
						ROCKBASS	ROCKBASS	I	2	16	75- 81
			1	POT. RICHARDSONI	MED.	ROCKBASS	ROCKBASS	II+	2	112	142-143
						PUMPKINSEED	PUMPKINSEED	II+	1	14	91
						YELLOW PERCH	YELLOW PERCH	I	71	973	88-108
						YELLOW PERCH	YELLOW PERCH	II+	50	1412	110-265
FAVN			1	POT. RICHARDSONI	MED.	ROCKBASS	ROCKBASS	I	3	66	100-105
						ROCKBASS	ROCKBASS	II+	6	516	112-120
						YELLOW PERCH	YELLOW PERCH	II+	1	12	112
						YELLOW PERCH	YELLOW PERCH	II+	1	12	112
			2	NO VEGETATION	0	ROCKBASS	ROCKBASS	II+	3	146	133-139
						ROCKBASS	ROCKBASS	II+	3	146	133-139
						ROCKBASS	ROCKBASS	I	1	18	96
						ROCKBASS	ROCKBASS	II+	5	513	111-211
			3	POT. PRAELONGIS	MED.	SMALLMOUTH BASS	SMALLMOUTH BASS	I	1	8	89
						SMALLMOUTH BASS	SMALLMOUTH BASS	I	8	124	95-108
						YELLOW PERCH	YELLOW PERCH	II+	5	93	110-129
						YELLOW PERCH	YELLOW PERCH	II+	5	93	110-129
			4	NO VEGETATION	0	ROCKBASS	ROCKBASS	II+	2	118	120-160
						SMALLMOUTH BASS	SMALLMOUTH BASS	I	5	58	90-110
						SMALLMOUTH BASS	SMALLMOUTH BASS	II+	1	168	221
						SMALLMOUTH BASS	SMALLMOUTH BASS	II+	1	168	221

APPENDIX
HOOPNET CATCH DATA

				VEGETATION		FISH				
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
9/ 6 83	ST. CLAIR	RUSSELL	1	POT. PRAELONGIS	MED.	SPOTTAIL SHINER	II+	5	84	103-129
						ROCKBASS	I	1	14	86
						ROCKBASS	II+	4	194	112-154
						YELLOW PERCH	I	2	26	109
						YELLOW PERCH	II+	8	394	110-265
						ROCKBASS	II+	5	686	127-261
						SMALLMOUTH BASS	I	6	75	95-106
						YELLOW PERCH	II+	1	14	120
			2	NO VEGETATION	O	WHITE SUCKER	I+	1	30	136
						SPOTTAIL SHINER	II+	7	112	108-129
						HORNHEAD CHUB	I+	2	37	116-118
						ROCKBASS	I	1	14	90
						ROCKBASS	II+	5	748	130-257
						YELLOW PERCH	I	11	119	97-109
						YELLOW PERCH	II+	16	395	111-200
						ROCKBASS	I	1	22	101
						ROCKBASS	II+	8	630	125-190
			3	POT. PRAELONGIS	MED.					
			4	NO VEGETATION	O					

APPENDIX
HOOPNET CATCH DATA

HOOPNET CATCH DATA				VEGETATION		FISH						
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)		
9/ 8/83	DETROIT	BELLE	1	NO VEGETATION	0	SPOTTAIL SHINER	II+	1	11	100		
						ROCKBASS	I	2	20	77- 91		
						LOGPERCH	II+	1	10	105		
						YELLOW PERCH	II+	5	237	112-244		
		2	POT. RICHARDSONI	MED.	SPOTTAIL SHINER	II+	1	12	104			
					ROCKBASS	I	3	53	78-108			
					ROCKBASS	II+	2	44	113-115			
					YELLOW PERCH	I	1	15	109			
					YELLOW PERCH	II+	10	187	112-132			
		3	NAJAS FLEXILIS	MED.	SPOTTAIL SHINER	II+	1	10	90			
					ROCKBASS	I	1	9	80			
ROCKBASS	II+				3	124	122-140					
YELLOW PERCH	I				1	9	100					
YELLOW PERCH	II+				1	16	111					
4	NO VEGETATION	0	ROCKBASS	I	1	11	90					
			ROCKBASS	II+	1	270	235					
			PUMPKINSEED	II+	1	134	184					
			YELLOW PERCH	I	1	14	106					
			YELLOW PERCH	II+	1	20	118					
HENNEPIN		1	NO VEGETATION	0	YELLOW PERCH	II+	1	22	130			
					2	POT. NARROW	MED.	YELLOW PERCH	II+	1	12	112
								3	VALLISNERIA AMER	HIGH	STONEROLLER	II+	1	13	126
		ROCKBASS	I	1							18	95
		ROCKBASS	II+	1							36	128
								PUMPKINSEED	II+	1	66	143
					YELLOW PERCH	I	4	41	100-108			
					YELLOW PERCH	II+	8	218	113-195			
		4	NO VEGETATION	0	NO FISH CAUGHT							

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	VEGETATION		FISH			
					DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
9/ 8/83	DETROIT	STONY	1	VALLISNERIA AMER	HIGH	ROCKBASS	I	1	12	80
						ROCKBASS	II+	1	158	196
						YELLOW PERCH	II+	3	88	125-168
			2	NO VEGETATION	0	YELLOW BULLHEAD	II+	1	80	227
						CHANNEL CATFISH	II+	3	1650	335-410
						STONECAT	II+	3	268	152-225
						HORNHEAD CHUB	I+	1	12	105
						ROCKBASS	I	1	2	56
			3	MYRIO. SPICATUM	HIGH	CHANNEL CATFISH	II+	1	910	435
						CARP	I+	1	780	378
						BLACK REDHORSE	I+	1	537	360
						GOLDEN REDHORSE	I+	1	708	405
						ROCKBASS	II+	2	204	117-210
						YELLOW PERCH	II+	1	60	176
			4	NO VEGETATION	0	CHANNEL CATFISH	II+	5	5144	341-545
						CARP	I+	2	2244	415-450
						GOLDEN REDHORSE	I+	1	874	436
						ROCKBASS	I	2	16	73- 80
						ROCKBASS	II+	1	72	155
						YELLOW PERCH	II+	2	102	167-175

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	VEGETATION		FISH				
					STAG	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
10/ 4/83	ST. CLAIR		1	POT. RICHARDSONI	MED.	O	WHITE SUCKER	O	1	9	95
							STRIPED SHINER	II+	35	608	95-139
							HORNHEAD CHUB	I+	38	599	95-134
							ROCKBASS	I	3	21	64- 80
							ROCKBASS	II+	1	106	165
							YELLOW PERCH	I	22	197	92-109
							YELLOW PERCH	II+	70	1889	110-206
							WHITE SUCKER	I+	1	10	112
							HORNHEAD CHUB	I+	7	131	105-128
							ROCKBASS	I	3	24	69- 92
			2	NO VEGETATION	O		ROCKBASS	II+	6	296	118-146
							YELLOW PERCH	II+	41	1581	112-208
							WALLEYE	I	1	120	254
							WHITE SUCKER	I+	2	32	112-134
							HORNHEAD CHUB	I+	2	34	116-118
							ROCKBASS	II+	8	676	112-220
							YELLOW PERCH	I	2	14	75- 96
							YELLOW PERCH	II+	11	292	112-165
							HORNHEAD CHUB	I+	1	18	122
							ROCKBASS	I	1	10	82
			3	POT. PRAELONGIS	LOW		ROCKBASS	II+	2	88	131-136
							YELLOW PERCH	I	3	24	60-109
							YELLOW PERCH	II+	29	963	112-226
							ROCKBASS	I	1	16	96
							ROCKBASS	II+	6	304	116-185
							SMALLMOUTH BASS	O	1	5	77
							ROCKBASS	II+	1	70	150
							SPOTTAIL SHINER	II+	1	18	111
							HORNHEAD CHUB	I+	2	50	134-139
							ROCKBASS	II+	3	745	178-238
			4	NO VEGETATION	O		YELLOW PERCH	I	8	87	95-109
							YELLOW PERCH	II+	33	1562	110-307
							HORNHEAD CHUB	I+	1	14	115
							ROCKBASS	I	2	23	85- 87
							YELLOW PERCH	I	2	18	97-105
							YELLOW PERCH	II+	4	113	122-181

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION			FISH			
				DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
10/ 4/83	CLAIR	RUSSELL	1	POT. PRAELONGIS	HIGH	HORNHEAD CHUB	I+	3	47	103-117
						ROCKBASS	I	3	52	80-105
						BLACK CRAPPIE	II+	1	214	236
						YELLOW PERCH	I	8	86	98-108
						YELLOW PERCH	II+	5	68	110-120
				NO VEGETATION	O	HORNHEAD CHUB	I+	8	152	106-139
						ROCKBASS	I	3	34	67-93
						ROCKBASS	II+	8	580	127-180
						BLACK CRAPPIE	II+	3	506	213-228
						YELLOW PERCH	I	2	22	108-109
						YELLOW PERCH	II+	3	265	112-258
				POT. NARROW	MED.	SPOTTAIL SHINER	II+	3	32	95-107
						HORNHEAD CHUB	I+	1	19	120
						YELLOW PERCH	I	5	55	97-106
						YELLOW PERCH	II+	5	162	110-213
				NO VEGETATION	O	CARP	I+	1	2700	570
						ROCKBASS	I	1	24	107
						ROCKBASS	II+	2	72	112-125
						SMALLMOUTH BASS	I	1	9	88
						YELLOW PERCH	I	1	11	102
						YELLOW PERCH	II+	2	30	116-120

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	VEGETATION		SPECIES	LIFE STAGE	TOTAL		LENGTH RANGE (MM)
10/ 6/83	DETROIT	BELLE	1	POT. RICHARDSONI	MED.		HORNHEAD CHUB	I+	2	32	101-107
							ROCKBASS	I	2	23	90-93
							SMALLMOUTH BASS	I	1	10	96
							YELLOW PERCH	I	4	68	102-107
							YELLOW PERCH	II+	27	410	113-156
							ROCKBASS	II+	2	310	164-216
							BLUEGILL	II+	1	40	131
							SMALLMOUTH BASS	I	1	12	99
							YELLOW PERCH	I	3	26	98-106
			2	NO VEGETATION	O		YELLOW PERCH	II+	20	385	110-170
							ROCKBASS	I	2	11	54-80
							ROCKBASS	II+	1	214	216
							YELLOW PERCH	II+	3	43	113-115
							ROCKBASS	I	2	31	81-107
							ROCKBASS	II+	2	430	206-211
							YELLOW PERCH	I	2	19	97-107
							YELLOW PERCH	II+	13	232	110-141
			1	VALLISNERIA AMER	MED.		HORNHEAD CHUB	I+	1	30	140
							ROCKBASS	II+	1	40	130
							BLUEGILL	II+	1	14	87
							SMALLMOUTH BASS	O	1	5	71
							SMALLMOUTH BASS	I	1	12	104
							YELLOW PERCH	II+	21	514	110-177
							ROCKBASS	I	1	14	93
							ROCKBASS	II+	1	172	211
							SMALLMOUTH BASS	I	1	12	102
			2	NO VEGETATION	O		YELLOW PERCH	I	1	11	108
							YELLOW PERCH	II+	3	53	120-124
							ROCKBASS	I	1	14	93
							ROCKBASS	II+	1	172	211
							SMALLMOUTH BASS	I	1	12	102
							YELLOW PERCH	I	1	11	108
							YELLOW PERCH	II+	3	53	120-124
							BROWN BULLHEAD	II+	1	254	282
			3	VALLISNERIA AMER	MED.		STONECAT	II+	1	164	245
							WHITE SUCKER	I+	1	100	207
							ROCKBASS	I	1	21	102
							YELLOW PERCH	II+	1	70	185
							YELLOW PERCH	II+	1	15	117
							YELLOW PERCH	II+	1	15	117

APPENDIX
HOOPNET CATCH DATA

HOOPNET CATCH DATA				VEGETATION		FISH									
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)					
10/ 6/83	DETROIT	STONY	1	MYRIO. EXALBESC	HIGH	NORTHERN PIKE	I+	1	2000	710					
						WHITE PERCH	O	1	6	78					
						GOLDFISH	I+	1	74	161					
						CARP	I+	3	4100	380-545					
						ROCKBASS	I	7	64	58- 90					
						YELLOW PERCH	II+	2	55	130-145					
						2	NO VEGETATION	O	BROWN BULLHEAD	II+	1	214	253		
									ROCKBASS	I	2	28	84- 95		
									ROCKBASS	II+	3	160	119-168		
BLACK CRAPPIE	II+	1	350	276											
YELLOW PERCH	II+	1	26	133											
3	MYRIO. EXALBESC	MED.	CHANNEL CATFISH	II+	3	5100	459-715								
			STONECAT	II+	1	50	185								
			WHITE PERCH	I	1	29	129								
			ROCKBASS	I	1	14	87								
			ROCKBASS	II+	2	102	129-148								
4	NO VEGETATION	O	YELLOW BULLHEAD	II+	1	118	232								
			CHANNEL CATFISH	II+	2	1884	420-454								
			STONECAT	II+	4	628	214-235								
			ROCKBASS	II+	1	222	221								

APPENDIX
HOOPNET CATCH DATA

				VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (g)	LENGTH RANGE (mm)
5/21/84	ST. CLAIR	STAG	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	POT. NARROW	LOW	ALEWIFE GOLDEN REDHORSE	I I+	1 1	60 1200	197 496
			3	NO VEGETATION	0	ROCKBASS	II+	2	714	231-264
			4	CHARA SPP.	LOW	NO FISH CAUGHT				
			1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	NO VEGETATION	0	NO FISH CAUGHT				
			4	NO VEGETATION	0	NO FISH CAUGHT				
			1	POT. NARROW	LOW	ROCKBASS YELLOW PERCH	II+ II+	1 4	134 52	194 112-137
			2	NO VEGETATION	0	YELLOW PERCH	II+	1	30	145
			3	POT. NARROW	LOW	NO FISH CAUGHT				
			4	NO VEGETATION	0	NO FISH CAUGHT				

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	VEGETATION		DENSITY	SPECIES	LIFE STAGE	FISH		
										TOTAL	TOTAL	LENGTH
										WT. (G)	NO.	RANGE (MM)
5/23/84	DETROIT	BELLE	1	CHARA SPP.	LOW			ROCKBASS	I	60	5	76-104
								ROCKBASS	II+	38	1	130
								YELLOW PERCH	II+	54	2	125-154
			2	NO VEGETATION	0			ROCKBASS	I	80	5	83-103
								ROCKBASS	II+	653	6	117-220
								YELLOW PERCH	I	10	1	109
								YELLOW PERCH	II+	82	3	122-144
			3	NO VEGETATION	0			ROCKBASS	I	32	3	48-106
								YELLOW PERCH	II+	67	3	112-144
			4	NO VEGETATION	0			ROCKBASS	I	13	1	90
								ROCKBASS	II+	873	4	153-254
	HENNEPIN		1	NO VEGETATION	0			NO FISH CAUGHT				
			2	NO VEGETATION	0			ROCKBASS	II+	335	3	142-202
								YELLOW PERCH	II+	216	6	120-192
			3	NO VEGETATION	0			YELLOW PERCH	II+	78	4	115-130
			4	NO VEGETATION	0			SPOTTAIL SHINER	II+	12	1	115
								ROCKBASS	II+	30	1	116
								YELLOW PERCH	II+	222	5	128-187
								WALLEYE	II+	460	1	383
	STONY		1	NO VEGETATION	0			NO FISH CAUGHT				
			2	NO VEGETATION	0			STONECAT	II+	298	2	233-253
								WHITE SUCKER	I+	46030	55	368-540
								SPOTTAIL SHINER	II+	20	2	96-119
								ROCKBASS	II+	130	1	189
								WALLEYE	II+	1200	1	511
			3	NO VEGETATION	0			ROCKBASS	II+	2233	10	179-230
								YELLOW PERCH	II+	98	2	137-182
			4	NO VEGETATION	0			NO FISH CAUGHT				

APPENDIX

FISH

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION			FISH			
				Dominant Taxa	Density	Species	Life Stage	Total No.	Total Wt. (g)	Length Range (mm)
6/18/84	DETROIT	BELLE	1	POT. CRISPUS	LOW	SPOTTAIL SHINER	II+	1	18	115
						ROCKBASS	I	6	101	84-102
						ROCKBASS	II+	4	394	116-208
						YELLOW PERCH	II+	3	86	129-143
		NO VEGETATION	2	O	O	ROCKBASS	II+	5	730	165-227
		CHARA SPP.	3	LOW	LOW	ROCKBASS	I	4	77	85-99
						ROCKBASS	II+	5	556	137-217
						YELLOW PERCH	II+	1	20	117
		NO VEGETATION	4	O	O	ROCKBASS	I	2	32	84-95
						ROCKBASS	II+	1	150	193
						YELLOW PERCH	II+	2	49	128-130
		HENNEPIN	1	POT. NARROW	MED.	NO FISH CAUGHT				
		NO VEGETATION	2	O	O	NO FISH CAUGHT				
		STONY	1	POT. CRISPUS	MED.	SPOTTAIL SHINER	II+	1	12	112
						ROCKBASS	II+	4	312	133-173
						YELLOW PERCH	II+	3	236	113-233
		NO VEGETATION	4	O	O	SPOTTAIL SHINER	II+	2	19	96-104
		STONY	1	POT. CRISPUS	MED.	WHITE BASS	I	2	128	158-172
						ROCKBASS	II+	2	244	156-205
		NO VEGETATION	2	O	O	STONECAT	II+	3	304	194-220
						WHITE BASS	II+	1	342	308
						HORNHEAD CRUB	I+	1	40	148
						ROCKBASS	II+	5	674	130-212
		NO VEGETATION	3	POT. CRISPUS	LOW	STONECAT	II+	18	2124	201-250
						ROCKBASS	II+	2	211	136-202
		NO VEGETATION	4	O	O	ROCKBASS	II+	3	263	128-192
						YELLOW PERCH	II+	1	130	217

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION			FISH			
				Dominant Taxa	Density	Species	Life Stage	Total No.	Total Wt. (g)	Length Range (mm)
7/23/84	ST. CLAIR	STAG	1	POT. GRAMINEUS	MED.	NO FISH CAUGHT				
			2	NO VEGETATION	0	YELLOW PERCH	II+	1	28	146
			3	POT. RICHARDSONI	MED.	ROCKBASS	I	1	28	96
						ROCKBASS	II+	7	1090	172-217
			4	NO VEGETATION	0	HORNHEAD CHUB	I+	1	12	97
						ROCKBASS	II+	8	932	142-199
			1	NO VEGETATION	0	NO FISH CAUGHT				
			2	POT. GRAMINEUS	MED.	HORNHEAD CHUB	I+	1	28	137
						ROCKBASS	II+	5	828	149-230
						YELLOW PERCH	II+	29	990	113-237
			3	POT. GRAMINEUS	MED.	NO FISH CAUGHT				
			4	NO VEGETATION	0	HORNHEAD CHUB	I+	2	46	121-137
						ROCKBASS	II+	6	901	149-223
						SMALLMOUTH BASS	II+	1	742	375
						YELLOW PERCH	II+	8	366	119-234
			1	POT. GRAMINEUS	MED.	ROCKBASS	II+	2	538	232-245
			2	NO VEGETATION	0	ROCKBASS	II+	6	616	124-215
						SMALLMOUTH BASS	II+	1	222	265
						YELLOW PERCH	II+	2	165	139-180
			3	POT. GRAMINEUS	MED.	HORNHEAD CHUB	I+	2	63	134
						ROCKBASS	II+	4	624	151-224
						YELLOW PERCH	II+	27	1106	120-264
			4	NO VEGETATION	0	ROCKBASS	II+	6	1090	140-239
						SMALLMOUTH BASS	II+	1	980	408
						YELLOW PERCH	II+	1	30	135

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION			FISH			
				DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
7/30/84	DETROIT	BELLE	1	NO VEGETATION	0	WHITE PERCH/WHITE	I	1	16	106
						SPOTTAIL SHINER	II+	1	12	104
						ROCKBASS	I	2	32	83-100
						ROCKBASS	II+	2	270	112-219
						YELLOW PERCH	II+	10	376	112-161
						CARP	I+	1	2700	665
						ROCKBASS	I	3	26	77-78
						ROCKBASS	II+	1	38	118
						BLUEGILL	I	1	12	83
						YELLOW PERCH	II+	1	28	137
						ROCKBASS	I	6	72	67-85
						ROCKBASS	I	3	31	65-83
						ROCKBASS	II+	3	196	127-170
						YELLOW PERCH	II+	2	80	134-161
						SPOTTAIL SHINER	II+	2	16	110-112
						NO FISH CAUGHT				
						CARP	I+	1	1300	440
						SPOTTAIL SHINER	II+	1	8	93
						ROCKBASS	II+	1	42	135
						ROCKBASS	II+	1	22	110
						PUMPKINSEED	II+	2	224	157-190
						YELLOW PERCH	II+	2	81	132-150
						WALLEYE	II+	1	890	480
						STONECAT	II+	1	100	225
						SPOTTAIL SHINER	II+	1	10	92
						HORNHEAD CHUB	I	1	12	110
						ROCKBASS	I	1	20	95
						ROCKBASS	II+	1	160	195
						YELLOW PERCH	II+	3	374	163-254
						ALEWIFE	O	11	16	47-64
						CARP	I+	1	1100	452
						BLACK REDHORSE	I+	1	652	405
						CHANNEL CATFISH	II+	2	1582	411-463
						ROCKBASS	II+	4	362	140-190

APPENDIX
HOOPNET CATCH DATA

HOOPNET CATCH DATA

VEGETATION

FISH

DATE	RIVER	LOCATION	STA. NO.	Dominant Taxa	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
9/ 4/84	ST. CLAIR	STAG	1	MYRIO. EXALBESC	HIGH	YELLOW PERCH	II+	1	38	151
			2	NO VEGETATION	0	ALEWIFE	0	26	154	74- 97
						ALEWIFE	I	1	6	101
						FRESHWATER DRUM	II+	1	650	375
						RAINBOW TROUT	II+	1	258	320
						YELLOW PERCH	II+	2	40	120-150
			3	ELODEA CANADENS	HIGH	BLACK REDHORSE	I+	2	2040	475-501
						HORNHEAD CHUB	I+	1	16	117
						ROCKBASS	II+	1	230	219
						PUMPKINSEED	II+	1	24	115
						YELLOW PERCH	II+	20	912	112-240
			4	NO VEGETATION	0	ROCKBASS	II+	1	82	167
	FAWN		1	POT. RICHARDSONI	MED.	ROCKBASS	II+	1	30	117
						BLACK CRAPPIE	II+	1	352	281
			2	NO VEGETATION	0	ROCKBASS	II+	1	314	244
						WALLEYE	II+	1	200	311
			3	POT. PRAELONGIS	HIGH	ALEWIFE	0	2	10	76- 86
						BLACK REDHORSE	I+	1	682	435
						HORNHEAD CHUB	I+	1	25	140
						ROCKBASS	II+	3	189	143-156
						YELLOW PERCH	I	1	10	103
						YELLOW PERCH	II+	46	1579	115-207
			4	NO VEGETATION	0	ALEWIFE	0	1	4	88
						ROCKBASS	II+	4	413	125-210
			YELLOW PERCH	I	1	12	105			
			YELLOW PERCH	II+	30	827	115-164			
	RUSSELL		1	POT. PRAELONGIS	HIGH	NORTHERN PIKE	I+	1	1700	775
						SPOTTAIL SHINER	II+	1	8	97
						ROCKBASS	II+	1	92	174
						YELLOW PERCH	II+	1	54	173
			2	NO VEGETATION	0	ROCKBASS	II+	7	898	147-224
						YELLOW PERCH	II+	3	144	154-172
			3	POT. PRAELONGIS	HIGH	YELLOW PERCH	II+	1	44	154
						WALLEYE	II+	1	480	385
			4	NO VEGETATION	0	ROCKBASS	II+	1	262	233
						PUMPKINSEED	II+	1	76	144

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	VEGETATION		SPECIES	LIFE STAGE	FISH		
					DENSITY				TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
9/10/84	DETROIT	BELLE	1	POT. RICHARDSONI	MED.		ROCKBASS	I	2	30	83-105
							ROCKBASS	II+	1	46	137
			2	NO VEGETATION	O		ROCKBASS	I	1	6	71
							ROCKBASS	II+	1	172	194
							YELLOW PERCH	II+	3	124	147-161
			3	VALLISNERIA AMER	LOW		ROCKBASS	II+	1	162	219
			4	NO VEGETATION	O		ROCKBASS	I	2	30	88-104
							ROCKBASS	II+	3	501	129-225
		HENNEPIN	1	VALLISNERIA AMER	LOW		YELLOW PERCH	O	1	8	52
							YELLOW PERCH	I	1	6	92
			2	NO VEGETATION	O		YELLOW PERCH	II+	1	30	150
			3	VALLISNERIA AMER	MED.		ROCKBASS	I	1	12	95
			4	NO VEGETATION	O		CHANNEL CATFISH	II+	1	610	395
							YELLOW PERCH	II+	7	319	148-192
		STONY	1	MYRIO. SPICATUM	MED.		BROWN BULLHEAD	II+	5	1462	257-298
							WHITE BASS	O	2	20	89-108
							ROCKBASS	II+	1	26	121
			2	NO VEGETATION	O		CHANNEL CATFISH	II+	12	11310	339-635
							HORNHEAD CHUB	I+	1	24	126
							ROCKBASS	II+	2	350	196-210
							YELLOW PERCH	II+	1	56	165
			3	MYRIO. SPICATUM	LOW		CHANNEL CATFISH	II+	10	9140	357-720
							STONECAT	II+	1	128	243
							BLACK REDHORSE	I+	1	1020	480
							HORNHEAD CHUB	I+	1	22	122
			4	NO VEGETATION	O		ROCKBASS	II+	2	503	225-226
							CHANNEL CATFISH	II+	6	4424	373-462
							STONECAT	II+	1	122	238
							ROCKBASS	II+	2	408	210-213

APPENDIX
HOOPNET CATCH DATA

HOOPNET CATCH DATA

VEGETATION

FISH

DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE (MM)
10/ 2/84	ST. CLAIR	STAG	1	NO VEGETATION	0	WHITE SUCKER	I+	1	1200	505
			2	POT. RICHARDSONI	MED.	WHITE SUCKER STRIPED SHINER HORNYHEAD CHUB ROCKBASS	I+ II+ I+ II+	1 1 9 1	45 10 137 100	170 95 100-122 169
			3	MYRIO. EXALBESC	HIGH	WHITE SUCKER HORNYHEAD CHUB ROCKBASS ROCKBASS YELLOW PERCH	I+ I+ I II+ II+	1 6 1 2 4	3000 83 20 252 248	593 91-119 101 115-212 152-212
			4	NO VEGETATION	0	HORNYHEAD CHUB ROCKBASS YELLOW PERCH YELLOW PERCH	I+ II+ I II+	15 4 1 42	226 690 12 2145	97-122 170-250 105 120-251
		FAWN	1	POT. PRAELONGIS	HIGH	WHITE SUCKER ROCKBASS	I+ II+	1 2	204 282	267 170-205
			2	NO VEGETATION	0	ROCKBASS	II+	1	97	163
			3	POT. NARROW	HIGH	PUMPKINSEED YELLOW PERCH YELLOW PERCH	II+ I II+	1 1 2	68 12 52	147 107 129-134
			4	CHARA SPP.	LOW	ROCKBASS	II+	1	80	161
		RUSSELL	1	POT. RICHARDSONI	HIGH	NO FISH CAUGHT				
			2	NO VEGETATION	0	WHITE SUCKER ROCKBASS YELLOW PERCH	I+ II+ II+	2 1 4	2098 84 437	413-525 160 127-258
			3	POT. RICHARDSONI	HIGH	YELLOW PERCH	II+	1	54	163
			4	CHARA SPP.	LOW	ROCKBASS ROCKBASS YELLOW PERCH	I II+ II+	1 2 2	20 282 80	101 155-214 151-154

APPENDIX
HOOPNET CATCH DATA

HOOPNET CATCH DATA

VEGETATION

FISH

DATE	RIVER	LOCATION	STA. NO.	Dominant Taxa	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (g)	LENGTH RANGE (mm)				
10/ 4/84	DETROIT	BELLE	1	POT. RICHARDSONI	HIGH	SPOTTAIL SHINER	II+	1	8	104				
						ROCKBASS	I	6	57	70-104				
						ROCKBASS	II+	2	75	120-131				
						YELLOW PERCH	I	1	8	97				
						YELLOW PERCH	II+	2	55	140-151				
						2	NO VEGETATION	O	ROCKBASS	I	5	57	77- 88	
									ROCKBASS	II+	3	124	120-135	
									PUMPKINSEED	II+	1	12	90	
									SMALLMOUTH BASS	I	1	10	84	
									YELLOW PERCH	II+	1	32	142	
						3	MYRIO. EXALBESC	MED.	ROCKBASS	I	2	40	91-108	
ROCKBASS	II+	1	33	118										
YELLOW PERCH	II+	1	42	156										
4	NO VEGETATION	O	ROCKBASS	II+	4				482	160-195				
			YELLOW PERCH	II+	1				58	173				
			HENNEPIN	1	VALLISNERIA AMER	LOW	ROCKBASS	II+	1	90	160			
YELLOW PERCH	II+	17					807	144-185						
2	VALLISNERIA AMER	MED.					SMALLMOUTH BASS	I	1	28	106			
							3	VALLISNERIA AMER	HIGH	ROCKBASS	II+	1	85	162
										YELLOW PERCH	II+	11	564	144-168
4	NO VEGETATION	O					HORNHEAD CHUB	I+	1	32	120			
							YELLOW PERCH	II+	13	755	134-196			
STONY	1	MYRIO. EXALBESC					HIGH	STONECAT	II+	1	108	232		
								ROCKBASS	II+	1	228	230		
2	NO VEGETATION	O					CHANNEL CATFISH	II+	3	2122	328-471			
							ROCKBASS	II+	1	242	225			
3	MYRIO. EXALBESC	HIGH	AMERICAN EEL	II+	1	360	602							
			WALLEYE	II+	1	1100	472							
4	NO VEGETATION	O	ALEWIFE	O	2	20	84- 86							
			STONECAT	II+	8	804	115-248							
			ROCKBASS	II+	1	88	156							
			BLACK CRAPPIE	II+	1	178	227							

APPENDIX R

ANOVA Tables for Fish

ANALYSIS OF VARIANCE TABLES

LOCATION=STAG									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SQR TOTC	SQR(TOTAL NUMBER OF FISH + .5)							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	15	215.53284975	14.36885525	1.52	0.1792	0.551225	24.5238		
ERROR	20	145.01788507	7.2538925				RCCT MSE		
CORRECTED TOTAL	35	264.55073482			2.72963262		SQR TOTC MEAN		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F	
YEAR	1	23.29609272	3.13	0.0923	1	23.29609272	3.13	0.0923	
PCATH	4	145.09328854	4.87	0.0066	4	145.09328854	4.87	0.0066	
YEAR*PCATH	4	30.04427186	1.01	0.4267	4	30.04427186	1.01	0.4267	
DENSITY	1	0.06850540	0.01	0.9257	1	0.06850540	0.01	0.9257	
YEAR*DENSITY	1	0.95643005	0.12	0.7295	1	0.95643005	0.12	0.7295	
PCATH*DENSITY	4	5.82361433	0.20	0.9379	4	5.82361433	0.20	0.9379	
YEAR*PCATH*DENSITY	4	10.25268281	0.34	0.8450	4	10.25268281	0.34	0.8450	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F	
YEAR	1	23.29609272	3.13	0.0923	1	23.29609272	3.13	0.0923	
PCATH	4	145.09328854	4.87	0.0066	4	145.09328854	4.87	0.0066	
YEAR*PCATH	4	30.04427186	1.01	0.4267	4	30.04427186	1.01	0.4267	
DENSITY	1	0.06850540	0.01	0.9257	1	0.06850540	0.01	0.9257	
YEAR*DENSITY	1	0.95643005	0.12	0.7295	1	0.95643005	0.12	0.7295	
PCATH*DENSITY	4	5.82361433	0.20	0.9379	4	5.82361433	0.20	0.9379	
YEAR*PCATH*DENSITY	4	10.25268281	0.34	0.8450	4	10.25268281	0.34	0.8450	

LOCATION=STAG									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SQR TOTN	SQR(TOTAL SPECIES + .5)							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	15	4.10425275	0.27361717	1.55	0.1652	0.555532	22.2565		
ERROR	20	2.78887427	0.13944371				RCCT MSE		
CORRECTED TOTAL	35	6.89312702			0.37342162		SQR TOTN MEAN		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F	
YEAR	1	0.18955805	1.36	0.2574	1	0.18955805	1.36	0.2574	
PCATH	4	2.81616487	5.05	0.0056	4	2.81616487	5.05	0.0056	
YEAR*PCATH	4	0.21110215	0.38	0.8213	4	0.21110215	0.38	0.8213	
DENSITY	1	0.02075243	0.15	0.7037	1	0.02075243	0.15	0.7037	
YEAR*DENSITY	1	0.21612206	1.55	0.2275	1	0.21612206	1.55	0.2275	
PCATH*DENSITY	4	0.21687542	0.39	0.8141	4	0.21687542	0.39	0.8141	
YEAR*PCATH*DENSITY	4	0.42571277	0.78	0.5506	4	0.42571277	0.78	0.5506	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F	
YEAR	1	0.18955805	1.36	0.2574	1	0.18955805	1.36	0.2574	
PCATH	4	2.81616487	5.05	0.0056	4	2.81616487	5.05	0.0056	
YEAR*PCATH	4	0.21110215	0.38	0.8213	4	0.21110215	0.38	0.8213	
DENSITY	1	0.02075243	0.15	0.7037	1	0.02075243	0.15	0.7037	
YEAR*DENSITY	1	0.21612206	1.55	0.2275	1	0.21612206	1.55	0.2275	
PCATH*DENSITY	4	0.21687542	0.39	0.8141	4	0.21687542	0.39	0.8141	
YEAR*PCATH*DENSITY	4	0.42571277	0.78	0.5506	4	0.42571277	0.78	0.5506	

ANALYSIS OF VARIANCE TABLES

LOCATION=STAG									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SCP PER	SOURCE(S) OF VARIATION + SS							
SOURCE	DF	SS OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	15	174.25632271	11.61708541	3.89	0.0034	0.642233	100.0000		
ERROR	20	57.08106250	2.85405315				RCCT MSE		
CORRECTED TOTAL	35	231.33738521				2.20319150	SQR PER MEAN		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CP	TYPE II SS	F VALUE	PR > F	
YEAR	1	19.98474882	4.12	0.0560	1	19.98474882	4.12	0.0560	
PCATH	4	103.72008759	5.24	0.0043	4	103.72008759	5.24	0.0043	
YEAR*PCATH	4	28.70626283	1.48	0.2461	4	28.70626283	1.48	0.2461	
CEASITY	1	2.01112231	0.41	0.5271	1	2.01112231	0.41	0.5271	
YEAR*CEASITY	1	2.61457399	0.74	0.3984	1	2.61457399	0.74	0.3984	
PCATH*CEASITY	4	7.67776648	0.44	0.8095	4	7.67776648	0.44	0.8095	
YEAR*PCATH*CEASITY	4	8.54176075	0.44	0.7783	4	8.54176075	0.44	0.7783	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CP	TYPE IV SS	F VALUE	PR > F	
YEAR	1	19.98474882	4.12	0.0560	1	19.98474882	4.12	0.0560	
PCATH	4	103.72008759	5.24	0.0043	4	103.72008759	5.24	0.0043	
YEAR*PCATH	4	28.70626283	1.48	0.2461	4	28.70626283	1.48	0.2461	
CEASITY	1	2.01112231	0.41	0.5271	1	2.01112231	0.41	0.5271	
YEAR*CEASITY	1	2.61457399	0.74	0.3984	1	2.61457399	0.74	0.3984	
PCATH*CEASITY	4	7.67776648	0.44	0.8095	4	7.67776648	0.44	0.8095	
YEAR*PCATH*CEASITY	4	8.54176075	0.44	0.7783	4	8.54176075	0.44	0.7783	

LOCATION=STAG									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SCP PER	SOURCE(S) OF VARIATION + SS							
SOURCE	DF	SS OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	15	12.32356110	0.82156741	1.61	0.1479	0.605355	52.2624		
ERROR	20	6.68475516	0.33423796				RCCT MSE		
CORRECTED TOTAL	35	19.00831626				0.65896734	SQR PER MEAN		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CP	TYPE II SS	F VALUE	PR > F	
YEAR	1	0.00094830	0.00	0.9632	1	0.00094830	0.00	0.9632	
PCATH	4	6.80514649	3.52	0.0166	4	6.80514649	3.52	0.0166	
YEAR*PCATH	4	4.92243417	2.83	0.0518	4	4.92243417	2.83	0.0518	
CEASITY	1	0.12532456	0.29	0.5970	1	0.12532456	0.29	0.5970	
YEAR*CEASITY	1	0.02627577	0.06	0.8082	1	0.02627577	0.06	0.8082	
PCATH*CEASITY	4	0.64042139	0.37	0.8281	4	0.64042139	0.37	0.8281	
YEAR*PCATH*CEASITY	4	0.80341047	0.46	0.7624	4	0.80341047	0.46	0.7624	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CP	TYPE IV SS	F VALUE	PR > F	
YEAR	1	0.00094830	0.00	0.9632	1	0.00094830	0.00	0.9632	
PCATH	4	6.80514649	3.52	0.0166	4	6.80514649	3.52	0.0166	
YEAR*PCATH	4	4.92243417	2.83	0.0518	4	4.92243417	2.83	0.0518	
CEASITY	1	0.12532456	0.29	0.5970	1	0.12532456	0.29	0.5970	
YEAR*CEASITY	1	0.02627577	0.06	0.8082	1	0.02627577	0.06	0.8082	
PCATH*CEASITY	4	0.64042139	0.37	0.8281	4	0.64042139	0.37	0.8281	
YEAR*PCATH*CEASITY	4	0.80341047	0.46	0.7624	4	0.80341047	0.46	0.7624	

ANALYSIS OF VARIANCE TABLES

LOCATION=FAVA									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SCR TOTC	SCRITOTAL NUMBER OF FISH = .51							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	17	97.93369707	5.75491712	3.18	0.0012	0.423285	.5683149		
ERROR	22	106.8076440	4.85484700				SCR TOTC MEAN		
CORRECTED TOTAL	39	204.7413410				2.20337618	2.23351163		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F	
YEAR	1	5.88710540	1.21	0.2827	1	2.81017903	0.58	0.4546	
PCATH	4	42.54312582	2.19	0.1034	4	35.92361597	1.65	0.1553	
YEAR*PCATH	4	11.55655614	0.60	0.6899	4	10.05558027	0.52	0.7235	
DENSITY	1	22.85077873	4.72	0.0372	1	22.85077873	4.72	0.0372	
YEAR*DENSITY	1	4.69054628	0.97	0.3363	1	0.27364050	1.29	0.2679	
PCATH*DENSITY	4	7.45652119	0.39	0.8163	4	7.45652119	0.39	0.8163	
YEAR*PCATH*DENSITY	2	1.46641444	0.15	0.8588	2	1.46641444	0.15	0.8588	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F	
YEAR	1	4.81323237	0.55	0.5302	10	2.62854582	0.54	0.4656	
PCATH	4	40.51424124	2.05	0.1171	40	40.12642520	2.07	0.1158	
YEAR*PCATH	4	9.82004300	0.51	0.7320	40	10.06292260	0.52	0.7235	
DENSITY	1	14.97655142	3.05	0.0825	10	22.64023018	4.66	0.0420	
YEAR*DENSITY	1	6.26082246	1.29	0.2676	10	6.26082246	1.29	0.2676	
PCATH*DENSITY	4	7.30004522	0.35	0.8161	40	7.12424774	0.37	0.8256	
YEAR*PCATH*DENSITY	2	1.46641444	0.15	0.8588	2	1.46641444	0.15	0.8588	

LOCATION=FAVA									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SCR TOTN	SCRITOTAL SPECIES = .51							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	17	2.41103489	0.14182950	1.21	0.3296	0.464125	22.1315		
ERROR	22	2.56511580	0.11677790				SCR TOTN MEAN		
CORRECTED TOTAL	39	4.97615069				0.24172795	1.24124445		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F	
YEAR	1	0.03318044	0.30	0.5886	1	0.03318044	0.46	0.5057	
PCATH	4	1.17009945	2.52	0.0705	4	1.03521165	2.22	0.1004	
YEAR*PCATH	4	0.77621739	0.61	0.6899	4	0.66852456	1.00	0.4271	
DENSITY	1	0.28855230	2.47	0.1300	1	0.28855230	2.47	0.1300	
YEAR*DENSITY	1	0.03265648	0.28	0.6020	1	0.16554639	1.42	0.2465	
PCATH*DENSITY	4	0.31717172	0.68	0.6130	4	0.21717172	0.60	0.6130	
YEAR*PCATH*DENSITY	2	0.16471465	0.75	0.4659	2	0.16471465	0.75	0.4659	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F	
YEAR	1	0.11518110	0.55	0.5314	10	0.05220502	0.45	0.5107	
PCATH	4	1.13124512	2.43	0.0776	40	1.07118605	2.29	0.0517	
YEAR*PCATH	4	0.45237024	1.05	0.4020	40	0.44286516	0.95	0.4554	
DENSITY	1	0.13021007	1.12	0.2924	10	0.29046220	2.45	0.1250	
YEAR*DENSITY	1	0.10224632	1.00	0.3268	10	0.10224632	1.00	0.3268	
PCATH*DENSITY	4	0.31601319	0.68	0.6154	40	0.12527123	0.27	0.8592	
YEAR*PCATH*DENSITY	2	0.16471465	0.75	0.4659	2	0.16471465	0.75	0.4659	

ANALYSIS OF VARIANCE TABLES

LOCATION=FAVA								
GENERAL LINEAR MODEL PROCEDURE								
DEPENDENT VARIABLE	SOURCE	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	CORRECTED TOTAL	
PCCEL	17	73.26414556	4.3096556	0.81	0.6683	0.264763	115.3262	
ERROR	22	117.1496815	5.3249853					
					ADJUSTED R-SQ			
					0.50381025			
DEPENDENT VARIABLE	SOURCE	TYPE III SS	F VALUE	PR > F	CF	TYPE III SS	F VALUE	PR > F
YEAR	1	1.56490526	0.29	0.5932	1	0.13996625	0.03	0.8657
PCATH	4	21.26186565	1.00	0.4250	4	17.55155493	0.82	0.5225
YEAR*PCATH	4	16.41185682	0.76	0.5902	4	14.26944467	0.67	0.6151
DENSITY	1	21.20542132	4.04	0.0569	1	21.20542132	4.04	0.0569
YEAR*DENSITY	1	1.22533624	0.01	0.9447	1	4.32023068	0.01	0.9775
PCATH*DENSITY	4	8.44716771	0.40	0.8057	4	8.44716771	0.40	0.8057
YEAR*PCATH*DENSITY	2	0.52551746	0.05	0.9516	2	0.52551746	0.05	0.9516
DEPENDENT VARIABLE	SOURCE	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.76453222	0.15	0.7048	1	0.12626066	0.02	0.8790
PCATH	4	21.42106566	1.01	0.4256	4	22.02183357	1.03	0.4170
YEAR*PCATH	4	14.23052645	0.67	0.6210	4	14.21604564	0.67	0.6214
DENSITY	1	14.12135742	2.69	0.1177	1	20.70164239	3.81	0.0627
YEAR*DENSITY	1	4.25508111	0.80	0.3810	1	4.25508111	0.80	0.3810
PCATH*DENSITY	4	8.41316243	0.40	0.8066	4	8.06266663	0.38	0.8215
YEAR*PCATH*DENSITY	2	0.52551746	0.05	0.9516	2	0.52551746	0.05	0.9516

LOCATION=FAVA								
GENERAL LINEAR MODEL PROCEDURE								
DEPENDENT VARIABLE	SOURCE	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	CORRECTED TOTAL	
PCCEL	17	14.27600527	0.83975408	3.28	0.0049	0.717223	19.0552	
ERROR	22	5.42874652	0.24675221					
					ADJUSTED R-SQ			
					0.50381025			
DEPENDENT VARIABLE	SOURCE	TYPE III SS	F VALUE	PR > F	CF	TYPE III SS	F VALUE	PR > F
YEAR	1	0.76027685	0.07	0.7987	1	0.96416415	0.09	0.4826
PCATH	4	10.03512482	0.79	0.5001	4	9.76704556	0.74	0.5001
YEAR*PCATH	4	1.01212486	0.08	0.9750	4	0.48086882	0.04	0.7930
DENSITY	1	0.76027685	0.07	0.7987	1	0.76027685	0.07	0.7987
YEAR*DENSITY	1	0.76027685	0.07	0.7987	1	1.38230538	0.10	0.7257
PCATH*DENSITY	4	0.96782763	0.07	0.9750	4	0.96782763	0.07	0.9750
YEAR*PCATH*DENSITY	2	0.04061353	0.00	0.9997	2	0.04061353	0.00	0.9997
DEPENDENT VARIABLE	SOURCE	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	1.46885078	0.02	0.8846	1	0.92186564	0.02	0.8846
PCATH	4	10.44702367	1.02	0.4001	4	8.86001046	0.86	0.4001
YEAR*PCATH	4	0.46871846	0.04	0.7917	4	0.46871846	0.04	0.7917
DENSITY	1	0.16164853	0.01	0.9083	1	0.68242346	0.01	0.9083
YEAR*DENSITY	1	1.37128529	0.13	0.7153	1	1.37128529	0.13	0.7153
PCATH*DENSITY	4	0.96782763	0.07	0.9750	4	0.96782763	0.07	0.9750
YEAR*PCATH*DENSITY	2	0.04061353	0.00	0.9997	2	0.04061353	0.00	0.9997

ANALYSIS OF VARIANCE TABLES

LOCATION=RLSELL										
GENERAL LINEAR MODEL PROCEDURE										
DEPENDENT VARIABLE	SCR TOTL	SCR(TOTAL NUMBER OF FISH + .5)								
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.			
MODEL	19	136.8151347	7.2035766	1.98	0.0496	0.652503	27.5255			
ERROR	20	72.8643444	3.6432122	RECT PSE						SCR TOTL MEAN
CORRECTED TOTAL	39	209.6834792	1.90872136						2.1171751	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F		
YEAR	1	10.80444321	2.97	0.1005	1	9.81402522	2.65	0.1144		
PCATH	4	54.6839102	3.75	0.0196	4	54.75779450	2.76	0.0355		
YEAR*PCATH	4	56.7200659	3.65	0.0170	4	55.53247704	2.61	0.0384		
CENSITY	1	2.22541541	0.61	0.4432	1	2.22541541	0.61	0.4432		
YEAR*CENSITY	1	0.35477564	0.11	0.7454	1	0.50227850	0.14	0.7143		
PCATH*CENSITY	4	4.11326704	0.28	0.8860	4	4.11326704	0.28	0.8860		
YEAR*PCATH*CENSITY	4	7.85775157	0.54	0.7087	4	7.85775157	0.54	0.7087		
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F		
YEAR	1	9.17873566	2.52	0.1281	1	9.17873566	2.52	0.1281		
PCATH	4	53.76447632	3.69	0.0208	4	53.79447632	2.65	0.0208		
YEAR*PCATH	4	54.81651557	3.76	0.0154	4	54.81651557	2.76	0.0154		
CENSITY	1	1.81775520	0.50	0.4881	1	1.81775520	0.50	0.4881		
YEAR*CENSITY	1	0.54162553	0.15	0.6987	1	0.54162553	0.15	0.6987		
PCATH*CENSITY	4	4.32563167	0.30	0.8765	4	4.32563167	0.30	0.8765		
YEAR*PCATH*CENSITY	4	7.85775157	0.54	0.7087	4	7.85775157	0.54	0.7087		

LOCATION=RLSELL									
GENERAL LINEAR MODEL PROCEDURE									
DEPENDENT VARIABLE	SCR TOTL	SORTITOTAL SPECIES + .5)							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.		
MODEL	19	2.52446434	0.18545518	1.94	0.0746	0.646762	16.3295		
ERROR	20	1.90581639	0.09545082		RECT MSE		SCR TOTL MEAN		
CORRECTED TOTAL	39	0.43930068			0.30901589		1.46457551		
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F	
YEAR	1	0.20615028	2.16	0.1573	1	0.15064260	1.58	0.2236	
PCATH	4	1.35146536	3.64	0.0219	4	1.38845905	3.64	0.0221	
YEAR*PCATH	4	0.65557721	1.71	0.1868	4	0.46621566	1.22	0.3274	
CENSITY	1	0.22149658	2.42	0.1351	1	0.22149658	2.42	0.1351	
YEAR*CENSITY	1	0.00705449	0.02	0.3496	1	0.11066367	1.16	0.2949	
PCATH*CENSITY	4	0.87661069	1.72	0.1842	4	0.65861069	1.72	0.1842	
YEAR*PCATH*CENSITY	4	0.26516824	0.77	0.5557	4	0.29516824	0.77	0.5557	
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F	
YEAR	1	0.12266163	1.35	0.2518	1	0.12266163	1.35	0.2518	
PCATH	4	1.48443205	3.69	0.0171	4	1.48443205	3.69	0.0171	
YEAR*PCATH	4	0.41702552	1.05	0.3874	4	0.41702552	1.05	0.3874	
CENSITY	1	0.18170090	1.50	0.1829	1	0.18170090	1.50	0.1829	
YEAR*CENSITY	1	0.11587502	1.21	0.2837	1	0.11587502	1.21	0.2837	
PCATH*CENSITY	4	0.67404030	1.76	0.1756	4	0.67404030	1.76	0.1756	
YEAR*PCATH*CENSITY	4	0.26516824	0.77	0.5557	4	0.26516824	0.77	0.5557	

ANALYSIS OF VARIANCE TABLES

LOCATION=RLSELL

GENERAL LINEAR MODEL PROCEDURE

DEPENDENT VARIABLE	SCR PER	SORT(PERC) NMBERS + .5)						
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
MODEL	19	71.9522662	3.78645382	3.31	0.0053	0.78625	52.4448	
ERROR	20	22.85225622	1.1427826					
CORRECTED TOTAL	39	94.80452242			1.0690052			2.0362714
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F
YEAR	1	6.44365021	5.26	0.034	1	6.44365021	5.26	0.034
PCATH	4	30.78827331	6.74	0.013	4	30.78827331	6.74	0.013
YEAR*PCATH	4	19.01651855	3.25	0.018	4	19.01651855	3.25	0.018
CENSITY	1	2.29135263	2.01	0.172	1	2.29135263	2.01	0.172
YEAR*CENSITY	1	0.80249414	0.70	0.415	1	0.80249414	0.70	0.415
PCATH*CENSITY	4	4.02703135	0.88	0.492	4	4.02703135	0.88	0.492
YEAR*PCATH*CENSITY	4	5.9624752	2.10	0.113	4	5.9624752	2.10	0.113
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	6.26718272	7.23	0.014	1	6.26718272	7.23	0.014
PCATH	4	30.56016276	6.77	0.013	4	30.56016276	6.77	0.013
YEAR*PCATH	4	14.71367126	3.22	0.034	4	14.71367126	3.22	0.034
CENSITY	1	1.93015584	1.71	0.203	1	1.93015584	1.71	0.203
YEAR*CENSITY	1	0.56321351	0.64	0.365	1	0.56321351	0.64	0.365
PCATH*CENSITY	4	4.11203688	0.90	0.482	4	4.11203688	0.90	0.482
YEAR*PCATH*CENSITY	4	5.9624752	2.10	0.113	4	5.9624752	2.10	0.113

LOCATION=RLSELL

GENERAL LINEAR MODEL PROCEDURE

DEPENDENT VARIABLE	SCR RE	SORT(ROCK DIES NMBERS + .5)						
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
MODEL	19	25.18555040	1.32557844	3.36	0.0049	0.76183	40.1256	
ERROR	20	7.88370355	0.39418520					
CORRECTED TOTAL	39	33.06925395			0.62784170			1.56465051
SOURCE	DF	TYPE I SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F
YEAR	1	2.37507334	6.04	0.023	1	2.37507334	6.04	0.023
PCATH	4	14.25374017	6.04	0.002	4	14.25374017	6.04	0.002
YEAR*PCATH	4	1.91854254	1.22	0.334	4	1.91854254	1.22	0.334
CENSITY	1	2.25645570	5.83	0.025	1	2.25645570	5.83	0.025
YEAR*CENSITY	1	0.64255570	1.66	0.206	1	0.64255570	1.66	0.206
PCATH*CENSITY	4	2.43825520	1.55	0.227	4	2.43825520	1.55	0.227
YEAR*PCATH*CENSITY	4	1.23321275	0.78	0.550	4	1.23321275	0.78	0.550
SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	2.24150026	5.65	0.027	1	2.24150026	5.65	0.027
PCATH	4	14.25374017	6.04	0.002	4	14.25374017	6.04	0.002
YEAR*PCATH	4	1.84555555	1.17	0.355	4	1.84555555	1.17	0.355
CENSITY	1	2.19666291	5.57	0.028	1	2.19666291	5.57	0.028
YEAR*CENSITY	1	0.66923411	1.70	0.207	1	0.66923411	1.70	0.207
PCATH*CENSITY	4	2.38576389	1.51	0.233	4	2.38576389	1.51	0.233
YEAR*PCATH*CENSITY	4	1.23321275	0.78	0.550	4	1.23321275	0.78	0.550

ANALYSIS OF VARIANCE TABLES

LOCATION=BELLE ISLE

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE SCR TOTL SCRT(TOTAL NUMBER OF FISH * .5)

EXPLANATORY VARIABLE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
PCBL	15	24.15667246	1.27362487	1.02	0.4781	0.452579	26.6565
ERROR	20	24.68816216	1.24440811				
CORRECTED TOTAL	35	48.84483462			1.11553042		2.52752555

EXPLANATORY VARIABLE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F
YEAR	1	1.21626674	1.06	0.3100	1	1.48711506	1.20	0.2872
PCATH	4	8.47625562	1.80	0.1678	4	9.08073392	1.62	0.1627
YEAR*PCATH	4	5.47564581	1.50	0.1492	4	9.12300746	1.62	0.1621
CEASITY	1	0.20021413	0.16	0.6926	1	0.20021413	0.16	0.6926
YEAR*CEASITY	1	0.20021413	0.16	0.6926	1	0.20021413	0.16	0.6926
PCATH*CEASITY	4	0.40042826	0.08	0.9873	4	0.40042826	0.08	0.9873
YEAR*PCATH*CEASITY	4	0.40042826	0.17	0.5562	4	0.40042826	0.17	0.5562

EXPLANATORY VARIABLE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	1.21626674	1.03	0.3215	1	1.21626674	1.03	0.3215
PCATH	4	8.47625562	1.75	0.1712	4	8.47625562	1.75	0.1712
YEAR*PCATH	4	5.16164060	1.84	0.1555	4	5.16164060	1.84	0.1555
CEASITY	1	0.15063574	0.15	0.6993	1	0.15063574	0.15	0.6993
YEAR*CEASITY	1	0.15063574	0.15	0.6993	1	0.15063574	0.15	0.6993
PCATH*CEASITY	4	0.30127148	0.08	0.9879	4	0.30127148	0.08	0.9879
YEAR*PCATH*CEASITY	4	0.30127148	0.17	0.5562	4	0.30127148	0.17	0.5562

LOCATION=BELLE ISLE

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE SCR TOTL SCRT(TOTAL SPECIES * .5)

EXPLANATORY VARIABLE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
PCBL	15	2.25665765	0.12413588	0.99	0.5059	0.465037	21.8258
ERROR	20	2.20418515	0.12520926				
CORRECTED TOTAL	35	4.46084280			0.35384920		1.62124302

EXPLANATORY VARIABLE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE II SS	F VALUE	PR > F
YEAR	1	0.05483747	0.44	0.5157	1	0.06906265	0.55	0.4663
PCATH	4	0.79766465	1.59	0.2149	4	0.79805172	1.59	0.2145
YEAR*PCATH	4	1.02567660	2.04	0.1249	4	1.04176215	2.04	0.1215
CEASITY	1	0.07535054	0.60	0.4470	1	0.07535054	0.60	0.4470
YEAR*CEASITY	1	0.07535054	0.40	0.5357	1	0.04507082	0.36	0.5553
PCATH*CEASITY	4	0.17874709	0.36	0.8362	4	0.17874709	0.36	0.8362
YEAR*PCATH*CEASITY	4	0.17874709	0.34	0.8452	4	0.17874709	0.34	0.8452

EXPLANATORY VARIABLE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.04485648	0.26	0.6100	1	0.04485648	0.26	0.6100
PCATH	4	0.78469748	1.57	0.2210	4	0.78469748	1.57	0.2210
YEAR*PCATH	4	1.02057614	2.04	0.1275	4	1.02057614	2.04	0.1275
CEASITY	1	0.06625523	0.53	0.4754	1	0.06625523	0.53	0.4754
YEAR*CEASITY	1	0.06625523	0.43	0.5184	1	0.05412071	0.42	0.5184
PCATH*CEASITY	4	0.16452037	0.33	0.8590	4	0.16452037	0.33	0.8590
YEAR*PCATH*CEASITY	4	0.16452037	0.34	0.8452	4	0.16452037	0.34	0.8452

ANALYSIS OF VARIANCE TABLES

LOCATION=BELLE ISLE										
GENERAL LINEAR MODEL PROCEDURE										
DEPENDENT VARIABLE	SCF PER	SCRTIPERCH ALPHBERS + .51								
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.			
MODEL	15	35.78270054	2.38548037	2.09	0.0115	0.732728	47.6556			
ERROR	20	14.51125027	0.72556252				RECT PSE			
CORRECTED TOTAL	35	50.29395081				0.85175958	SQR PER MEAN			
							7.71676566			
SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F		
YEAR	1	5.83645742	8.05	0.002	1	5.67507107	7.82	0.002		
PCATH	4	13.66410222	4.05	0.0078	4	13.83805739	4.77	0.0073		
YEAR*PCATH	4	13.77243341	4.75	0.0074	4	13.61357071	4.69	0.0078		
CENSITY	1	0.08600230	0.12	0.7313	1	0.08600230	0.12	0.7313		
YEAR*CENSITY	1	1.24321745	1.71	0.2054	1	1.15113720	1.64	0.2148		
PCATH*CENSITY	4	0.30572205	0.11	0.9788	4	0.30972205	0.11	0.9788		
YEAR*PCATH*CENSITY	4	4.92547600	1.70	0.1902	4	4.92547600	1.70	0.1902		
SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F		
YEAR	1	5.63527515	7.77	0.0114	1	5.63527515	7.77	0.0114		
PCATH	4	13.46343505	4.64	0.0082	4	13.46343505	4.64	0.0082		
YEAR*PCATH	4	13.46343505	4.65	0.0081	4	13.46343505	4.65	0.0081		
CENSITY	1	0.08365551	0.12	0.7377	1	0.08365551	0.12	0.7377		
YEAR*CENSITY	1	1.18582415	1.63	0.2157	1	1.18582415	1.63	0.2157		
PCATH*CENSITY	4	0.30804323	0.11	0.9790	4	0.30804323	0.11	0.9790		
YEAR*PCATH*CENSITY	4	4.92547600	1.70	0.1902	4	4.92547600	1.70	0.1902		

LOCATION=BELLE ISLE										
GENERAL LINEAR MODEL PROCEDURE										
DEPENDENT VARIABLE	SCF PER	SCRTIPERCH BASS ALPHBERS + .51								
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.			
MODEL	15	14.28381227	0.95177660	1.56	0.1642	0.567775	23.7146			
ERROR	20	5.61055027	0.48054951				RECT PSE			
CORRECTED TOTAL	35	19.89436254				0.69321679	SQR RB MEAN			
							2.05612012			
SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F		
YEAR	1	3.3172435	6.50	0.0161	1	3.30682772	6.48	0.0163		
PCATH	4	2.0520882	1.07	0.3989	4	2.02882112	1.06	0.4041		
YEAR*PCATH	4	3.0561153	1.61	0.2114	4	3.45103445	1.62	0.1652		
CENSITY	1	0.0839275	0.16	0.6927	1	0.0839275	0.16	0.6927		
YEAR*CENSITY	1	0.3503275	0.61	0.3782	1	0.43623554	0.93	0.3521		
PCATH*CENSITY	4	1.8310022	0.54	0.4601	4	1.81100322	0.54	0.4601		
YEAR*PCATH*CENSITY	4	3.53654617	1.64	0.1607	4	3.53654617	1.64	0.1607		
SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F		
YEAR	1	3.21757740	6.70	0.0176	1	3.21757740	6.70	0.0176		
PCATH	4	1.94598487	1.01	0.4246	4	1.94598487	1.01	0.4246		
YEAR*PCATH	4	2.82744427	1.47	0.2483	4	2.82744427	1.47	0.2482		
CENSITY	1	0.08272660	0.17	0.6826	1	0.08272660	0.17	0.6826		
YEAR*CENSITY	1	0.37840413	0.75	0.3854	1	0.37840413	0.75	0.3854		
PCATH*CENSITY	4	1.70013673	0.88	0.4510	4	1.70013673	0.88	0.4510		
YEAR*PCATH*CENSITY	4	3.53654617	1.64	0.1607	4	3.53654617	1.64	0.1607		

ANALYSIS OF VARIANCE TABLES

LOCATION=PT HERRERIA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE	SCR TOTC	SGRT(TOTAL NUMBER OF FISH + .5)						
SOURCE	DF	SS OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
MODEL	10	38.07215517	2.11512155	1.26	0.3013	0.515684	20.2652	
ERROR	21	35.15555674	1.67427899					
CORRECTED TOTAL	31	73.22771191			1.29393929		2.25541352	
SOURCE	DF	TYPE I SS	F VALUE	PR > F				
YEAR	1	2.1686567	1.25	0.2687	1	4.7243333	2.62	0.1078
PCAT	4	11.72059120	1.75	0.1768	4	11.75054120	1.76	0.1746
YEAR*PCAT	4	2.77306765	1.21	0.2986	4	8.07123519	1.21	0.2360
DENSITY	1	0.00374225	0.00	0.9627	1	0.00374225	0.00	0.9627
YEAR*DENSITY	1	0.00446834	0.00	0.8286	1	1.09606445	0.00	0.9275
PCAT*DENSITY	4	8.15566711	1.22	0.3305	4	6.19966711	1.22	0.2305
YEAR*PCAT*DENSITY	1	7.13324006	1.42	0.2649	3	7.13324006	1.42	0.2649
SOURCE	DF	TYPE III SS	F VALUE	PR > F				
YEAR	1	4.16482727	2.45	0.1256	10	2.32472408	1.55	0.1724
PCAT	4	12.4222472	2.00	0.1308	40	12.02923626	1.80	0.1672
YEAR*PCAT	4	6.57104462	1.24	0.2883	40	5.67842860	1.45	0.2542
DENSITY	1	0.2101355	0.15	0.6710	10	0.01525324	0.01	0.9248
YEAR*DENSITY	1	1.2654382	0.77	0.3805	10	1.28504382	0.77	0.3805
PCAT*DENSITY	4	6.05507059	1.20	0.3368	40	9.57117512	1.45	0.1713
YEAR*PCAT*DENSITY	1	7.12324006	1.42	0.2649	3	7.12324006	1.42	0.2649

LOCATION=PT HERRERIA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE	SCR TOTC	SGRT(TOTAL SPECIES + .5)						
SOURCE	DF	SS OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
MODEL	10	2.82442620	0.28244262	1.25	0.3089	0.517070	22.2554	
ERROR	21	2.45114274	0.11672113					
CORRECTED TOTAL	31	5.27556894			0.34164474		1.53235464	
SOURCE	DF	TYPE I SS	F VALUE	PR > F				
YEAR	1	0.16505861	1.41	0.2476	1	0.34762421	2.98	0.0989
PCAT	4	0.61030834	1.22	0.2951	4	0.65061507	1.25	0.2704
YEAR*PCAT	4	0.20550848	0.46	0.6246	4	0.20151806	0.46	0.6360
DENSITY	1	0.01415472	0.12	0.7311	1	0.01415472	0.12	0.7311
YEAR*DENSITY	1	0.02283864	0.19	0.6646	1	0.10260577	0.16	0.6964
PCAT*DENSITY	4	0.05778850	1.41	0.2655	4	0.65778850	1.41	0.2655
YEAR*PCAT*DENSITY	1	0.02661527	0.46	0.6370	3	0.02661527	0.46	0.6370
SOURCE	DF	TYPE III SS	F VALUE	PR > F				
YEAR	1	0.31658215	2.71	0.1145	10	0.26067004	2.23	0.1455
PCAT	4	0.66661655	1.47	0.2466	40	0.65863503	1.47	0.2466
YEAR*PCAT	4	0.19707652	0.42	0.7909	40	0.27810664	0.41	0.7326
DENSITY	1	0.00013581	0.00	0.9727	10	0.01112462	0.00	0.9700
YEAR*DENSITY	1	0.12530517	1.07	0.3119	10	0.12530517	1.07	0.3119
PCAT*DENSITY	4	0.01124855	0.31	0.8989	40	0.09365552	1.51	0.1455
YEAR*PCAT*DENSITY	1	0.03661527	0.46	0.6370	3	0.03661527	0.46	0.6370

ANALYSIS OF VARIANCE TABLES

LOCATION=PT HENNEPIN

GENERAL LINEAR MODEL PROCEDURE

DEPENDENT VARIABLE	SQR PER	SORT(PERC) NUMBERS + .51						
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
MODEL	10	24.98743043	2.498743043	1.47	0.1982	0.527230	0.41321	
ERROR	21	27.80075051	1.32384074			ACCT PSE	SQR PER MEAN	
CORRECTED TOTAL	31	52.78818094			1.19058476		1.43174656	

SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE III SS	F VALUE	PR > F
YEAR	1	0.50507003	0.48	0.4874	1	1.77667292	1.24	0.2557
PCATH	4	11.73275752	2.92	0.021	4	12.52573261	2.27	0.0598
YEAR*PCATH	4	14.85250642	2.61	0.0516	4	12.64044482	2.25	0.0637
CEASITY	1	0.00011256	0.05	0.8333	1	0.00011256	0.05	0.8333
YEAR*CEASITY	1	1.33057772	1.01	0.3274	1	1.90795607	1.44	0.2433
PCATH*CEASITY	4	1.25815268	0.24	0.9139	4	1.25815268	0.24	0.9139
YEAR*PCATH*CEASITY	3	4.80600528	1.21	0.3305	3	4.80600528	1.21	0.3305

SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	1.52247444	1.16	0.2942	10	1.36235565	1.03	0.3215
PCATH	4	12.57150485	2.96	0.0084	40	12.15167024	2.25	0.0521
YEAR*PCATH	4	12.21366625	2.90	0.0739	40	12.89056191	2.43	0.0752
CEASITY	1	0.00011256	0.01	0.9406	10	0.02644612	0.02	0.8889
YEAR*CEASITY	1	2.06355458	1.56	0.2256	10	2.06355458	1.56	0.2256
PCATH*CEASITY	4	1.22183405	0.23	0.9169	40	1.92718018	0.27	0.9302
YEAR*PCATH*CEASITY	3	4.80600528	1.21	0.3305	3	4.80600528	1.21	0.3305

LOCATION=PT HENNEPIN

GENERAL LINEAR MODEL PROCEDURE

DEPENDENT VARIABLE	SQR PER	SORT(PERC) NUMBERS + .51						
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
MODEL	10	2.55238768	0.255238768	0.04	0.8278	0.354631	0.255238	
ERROR	21	7.15230054	0.34058574			ACCT PSE	SQR PER MEAN	
CORRECTED TOTAL	31	9.70468822			0.58526709		1.0554173	

SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE III SS	F VALUE	PR > F
YEAR	1	0.18243321	0.53	0.4725	1	0.48702758	1.42	0.2464
PCATH	4	0.00000000	0.00	0.9999	4	0.74867022	0.25	0.9036
YEAR*PCATH	4	0.22475833	0.66	0.6342	4	0.79983217	0.28	0.8778
CEASITY	1	0.25523877	0.75	0.3877	1	0.25523877	0.75	0.3877
YEAR*CEASITY	1	0.19622302	0.58	0.4528	1	0.00858536	0.03	0.8725
PCATH*CEASITY	4	2.33049700	1.70	0.1874	4	2.33049700	1.70	0.1874
YEAR*PCATH*CEASITY	3	0.24262348	0.24	0.8702	3	0.24262348	0.24	0.8702

SOURCE	DF	TYPE III SS	F VALUE	PR > F	CF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.25641122	1.42	0.2163	10	0.41683150	1.22	0.2825
PCATH	4	0.72211752	0.24	0.9150	40	0.57941220	0.62	0.7503
YEAR*PCATH	4	0.00000000	0.00	0.9999	40	0.51461410	0.78	0.6234
CEASITY	1	0.05906174	0.26	0.6138	10	0.26717663	0.78	0.3866
YEAR*CEASITY	1	0.00000000	0.00	0.9999	10	0.00000000	0.00	0.9999
PCATH*CEASITY	4	2.31685776	1.65	0.1897	40	1.44126165	1.05	0.4046
YEAR*PCATH*CEASITY	3	0.24262348	0.24	0.8702	3	0.24262348	0.24	0.8702

ANALYSIS OF VARIANCE TABLES

LOCATION=STCA1									
GENERAL LINEAR MODELS PRECEDE									
DEPENDENT VARIABLE	SCR TOTL	SCR(TOTAL NUMBER OF FISH + 1)	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
SCALCE	16	10.26451562	C.58691776	0.26	0.9975	0.135515	53.0221		
ERRCH	23	46.26515235	2.25532159						
CORRECTED TOTAL	39	56.52966807							
SCALCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F	
YEAR	3	C.07374627	C.03	C.8596	1	C.14105746	C.06	C.8066	
MONTH	4	2.27652402	C.25	C.5075	4	2.14055055	C.23	C.5108	
YEAR*MONTH	4	2.54685427	C.32	C.8611	4	2.20972304	C.26	C.8258	
DENSITY	1	C.27643218	C.12	C.7322	1	C.27643218	C.12	C.7322	
YEAR*DENSITY	1	C.26715583	C.12	C.7366	1	C.03148527	C.01	C.5680	
MONTH*DENSITY	4	1.11528001	C.12	C.5731	4	1.11528001	C.12	C.5731	
YEAR*MONTH*DENSITY	3	2.40422423	C.52	C.6715	3	2.60422423	C.52	C.6715	
SCALCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F	
YEAR	3	C.13627400	C.06	C.8086	14	C.06413427	C.04	C.8456	
MONTH	4	2.24264612	C.24	C.5103	44	2.51540421	C.23	C.5517	
YEAR*MONTH	4	2.28572304	C.36	C.8358	44	2.64967650	C.29	C.6524	
DENSITY	1	C.16027851	C.07	C.7943	14	C.27643218	C.12	C.7322	
YEAR*DENSITY	1	C.03148527	C.01	C.5080	14	C.03148527	C.01	C.5680	
MONTH*DENSITY	4	1.11528001	C.12	C.5731	44	C.19208853	C.02	C.5551	
YEAR*MONTH*DENSITY	2	2.40422423	C.52	C.6715	3	2.60422423	C.52	C.6715	

LOCATION=STCA1									
GENERAL LINEAR MODELS PRECEDE									
DEPENDENT VARIABLE	SCR TOTL	SCR(TOTAL SPECIES + 1)	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.	
SCALCE	16	2.70054400	C.16003027	1.10	0.4124	C.485261	15.1724		
ERRCH	23	2.86485600	C.12640903						
CORRECTED TOTAL	39	5.56539999							
SCALCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F	
YEAR	3	C.02620428	0.22	C.0313	1	0.62859024	4.61	C.0427	
MONTH	4	1.04221585	1.51	C.1459	4	1.00151728	1.84	C.1557	
YEAR*MONTH	4	C.00000000	0.00	C.8101	4	0.28420235	0.52	C.7214	
DENSITY	1	C.01000000	0.12	C.7200	1	0.01000000	0.12	C.7200	
YEAR*DENSITY	1	C.00000000	0.01	C.9329	1	C.00339624	0.02	C.8761	
MONTH*DENSITY	4	C.01269142	0.76	C.5640	4	0.41269142	0.76	C.5640	
YEAR*MONTH*DENSITY	3	C.26526212	C.71	C.5585	3	C.28936212	C.71	C.5585	
SCALCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F	
YEAR	3	C.55122232	4.33	C.0490	14	0.67904421	4.56	C.0367	
MONTH	4	C.55000000	1.89	C.1457	44	1.27172182	2.33	C.0652	
YEAR*MONTH	4	C.28420235	0.52	C.7214	44	C.15142885	0.28	C.8852	
DENSITY	1	C.02021170	0.22	C.6422	14	0.01000000	0.12	C.7200	
YEAR*DENSITY	1	C.00339624	0.02	C.8761	14	0.00339624	0.02	C.8761	
MONTH*DENSITY	4	C.41269142	0.76	C.5640	44	C.33745874	0.62	C.5542	
YEAR*MONTH*DENSITY	2	C.26526212	C.71	C.5585	3	C.28936212	C.71	C.5585	

ANALYSIS OF VARIANCE TABLES

LOCATION=STEAN									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SCR PER	SCRTYPE=PCRT ALPHABET + .51	SLM OF SQUARES	MEAN SQUARE	F VALUE	PR	F	R-SQUARE	C.V.
SCLAGE	CF								
PCCEL	18		4.76412172	C.26578787	1.00		0.4941	C.46188C	45.8537
ERROR	21		0.97287875	C.2654228C					
CORRECTED TOTAL	29		10.25800048				0.51519200		1.03245624
SCLAGE	CF	TYPE I SS	F VALUE	PR	F	CF	TYPE II SS	F VALUE	PR
YEAR	1	1.17075658	4.44	C.0472		1	0.49124620	1.85	C.1881
PCATH	4	C.71458731	C.47	C.6180		4	0.74904168	C.71	C.5571
YEAR*PCATH	4	C.58645145	C.55	C.6994		4	C.21889419	C.21	C.8483
DENSITY	1	C.46574838	1.83	C.1905		1	0.48574838	1.83	C.1505
YEAR*DENSITY	1	C.33615701	1.27	C.2727		1	C.04092231	C.23	C.4379
PCATH*DENSITY	4	1.04125219	C.58	C.4392		4	1.04125219	C.58	C.4392
YEAR*PCATH*DENSITY	3	C.43956824	C.55	C.6524		3	0.43956824	C.55	C.6524
SCLAGE	CF	TYPE III SS	F VALUE	PR	F	CF	TYPE IV SS	F VALUE	PR
YEAR	1	C.5168856C	1.56	C.1763		19	0.51744022	1.55	C.1772
PCATH	4	1.23021921	1.16	C.357C		49	0.72719482	C.65	C.8042
YEAR*PCATH	4	C.23185413	C.31	C.8663		49	C.32657407	C.31	C.8664
DENSITY	1	C.42447102	2.37	C.1385		19	0.48574838	1.83	C.1505
YEAR*DENSITY	1	C.06052231	C.23	C.6379		19	0.06052231	C.23	C.4379
PCATH*DENSITY	4	1.04125219	C.58	C.4392		49	0.82448837	C.78	C.5528
YEAR*PCATH*DENSITY	3	C.43956824	C.55	C.6524		3	0.43956824	C.55	C.6524

LOCATION=STEAN									
GENERAL LINEAR MODELS PROCEDURE									
DEPENDENT VARIABLE	SCR PER	SCRTYPE=PCRT ALPHABET + .51	SLM OF SQUARES	MEAN SQUARE	F VALUE	PR	F	R-SQUARE	C.V.
SCLAGE	CF								
PCCEL	18		3.44027785	C.15313544	0.33		C.9856	C.22031C	45.0524
ERROR	21		12.17588361	C.5758C358					
CORRECTED TOTAL	29		15.61616146				0.76144861		1.55221664
SCLAGE	CF	TYPE I SS	F VALUE	PR	F	CF	TYPE II SS	F VALUE	PR
YEAR	1	C.82512306	C.53	C.3459		1	0.49041513	C.78	C.3881
PCATH	4	C.30230581	C.13	C.6664		4	0.27553027	C.16	C.9583
YEAR*PCATH	4	1.85617510	C.71	C.5916		4	1.82653607	C.71	C.5571
DENSITY	1	C.07880387	C.14	C.7161		1	0.07880387	C.14	C.7161
YEAR*DENSITY	1	C.33251808	C.27	C.4572		1	C.21686561	C.27	C.5474
PCATH*DENSITY	4	C.39338665	C.17	C.4515		4	0.39338665	C.17	C.4515
YEAR*PCATH*DENSITY	3	C.13645728	C.08	C.6708		3	C.13645728	C.08	C.6708
SCLAGE	CF	TYPE III SS	F VALUE	PR	F	CF	TYPE IV SS	F VALUE	PR
YEAR	1	C.91444540	C.85	C.3569		19	C.48917041	C.84	C.3488
PCATH	4	C.22708805	C.15	C.4031		49	0.57416659	C.22	C.5182
YEAR*PCATH	4	1.82623607	C.71	C.5571		49	1.61510593	C.70	C.5029
DENSITY	1	C.07880387	C.14	C.7161		19	C.07880387	C.14	C.7161
YEAR*DENSITY	1	C.21686561	C.37	C.5474		19	C.21686561	C.37	C.5474
PCATH*DENSITY	4	C.32959613	C.17	C.4515		49	0.32959613	C.14	C.5645
YEAR*PCATH*DENSITY	3	C.13645728	C.08	C.6708		3	0.13645728	C.08	C.6708

APPENDIX S

Physical Data for Hoop Net Sites

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	COORD. (UPPER/LOWER)
5/23/83	ST. CLAIR	STAG	1	3.0	SILT & CLAY	SET	8.8	1.2	3500	497412
						LIFT	8.2	1.0	4699	309041
			2	5.0	SAND	SET	8.8	0.7	5500	497403
						LIFT	8.0	0.9	3600	309035
			3	3.0	SAND	SET	8.9	1.9	4800	497423
						LIFT	9.1	0.4	4500	309068
			4	3.0	SAND	SET	8.9	1.8	4500	497428
						LIFT	8.8	1.1	4300	309075
<hr/>										
		FAVN	1	3.0	SAND	SET	8.4	1.5	699	498270
						LIFT	8.8	1.4	100	309581
			2	3.0	SAND	SET	8.4	1.2	199	498272
						LIFT	8.9	0.6	199	309592
			3	4.0	SAND	SET	8.7	1.1	399	498284
						LIFT	9.0	0.5	250	309620
			4	3.8	SAND	SET	8.7	1.2	450	498285
						LIFT	8.9	0.5	150	309620
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		RUSSELL	1	4.0	SILT & CLAY	SET	8.4	1.6	350	498666
						LIFT	8.8	1.2	150	309975
			2	4.0	SAND	SET	8.4	1.5	300	498665
						LIFT	8.9	0.7	150	309874
			3	3.0	SAND	SET	8.2	0.5	550	498666
						LIFT	8.9	0.8	230	309958
			4	4.0	SILT & CLAY	SET	8.2	1.4	530	498666
						LIFT	8.9	0.7	250	309955
<hr/>										
		DETROIT								
		BELLE	1	6.0	RUBBLE	SET	11.3	1.2	430	499954
						LIFT	11.0	0.8	1999	312761
			2	3.0	RUBBLE	SET	11.5	1.1	439	499955
						LIFT	11.0	0.8	3000	312760
			3	5.0	SILT & CLAY	SET	12.5	0.2	610	499995
						LIFT	10.8	0.0	3000	312841
			4	5.0	SILT & CLAY	SET	12.3	0.2	630	499994
						LIFT	10.9	0.0	3000	312840
<hr/>										
		HENNEPIN								
			1	6.0	SAND	SET	11.4	0.6	4500	500701
						LIFT	11.6	0.5	3000	314073
			2	6.0	SAND	SET	11.3	0.6	4500	500701
						LIFT	11.6	0.5	3000	314076
			3	6.0	SILT & CLAY	SET	11.8	0.4	1900	500710
						LIFT	11.5	0.4	3500	314081
			4	6.0	SILT & CLAY	SET	11.8	0.5	1500	500710
						LIFT	11.5	0.4	3500	314081

5/23/83	DETROIT	STONY	1	4.0	SILT & CLAY	SET	11.8	0.2	1000	500981
			2	4.0	SILT & CLAY	LIFT	11.7	0.5	3500	314230
			3	5.0	RUBBLE	SET	11.8	0.3	1998	500987
			4	3.0	RUBBLE	LIFT	11.7	0.5	3500	314227
						SET	12.0	1.6	1000	501003
						LIFT	12.0	1.6	4500	314253
						SET	12.0	1.5	1000	501004
						LIFT	12.0	1.6	4500	314252

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
6/20/83	ST. CLAIR	STAG	1	4.5	SAND	SET	14.7	2.1	4000	497398
						LIFT	15.0	2.4	1999	309033
			2	5.0	SAND	SET	14.9	2.0	3999	497401
						LIFT	15.0	2.0	1999	309034
			3	4.0	SAND	SET	15.0	0.5	4500	497414
						LIFT	15.0	0.3	2500	309048
			4	4.5	SAND	SET	14.9	0.8	4000	497413
						LIFT	15.0	0.4	2199	309048
		FAWN	1	3.0	SAND	SET	15.2	1.1	3999	498269
						LIFT	15.5	0.9	3500	309583
			2	3.0	SAND	SET	15.2	1.2	3999	498269
						LIFT	15.3	1.0	3600	309586
			3	4.0	SAND	SET	15.6	1.3	3500	498288
						LIFT	15.3	1.1	3800	309623
			4	4.5	SAND	SET	15.5	1.2	3500	498286
						LIFT	15.3	1.2	4000	309622
		RUSSELL	1	5.0	SAND	SET	15.5	1.2	4500	498668
						LIFT	16.0	1.2	1999	309951
			2	5.0	SAND	SET	15.3	1.2	4300	498666
						LIFT	16.1	1.3	1999	309951
			3	4.0	SAND	SET	16.0	1.7	4399	498667
						LIFT	16.0	1.8	1699	309868
			4	4.5	SAND	SET	16.1	1.5	4300	498667
						LIFT	16.0	1.8	1800	309871
		DETROIT	1	3.0	RUBBLE	SET	21.0	0.1	1500	499881
						LIFT	21.0	0.5	450	312804
			2	3.0	RUBBLE	SET	21.0	0.1	1399	499882
						LIFT	21.0	0.5	450	312804
			3	5.0	SILT & CLAY	SET	22.0	0.0	1500	499893
						LIFT	20.7	0.1	160	312847
			4	4.0	SILT & CLAY	SET	20.7	0.0	1399	499893
						LIFT	20.7	0.1	160	312847
		HENNEPIN	1	3.0	SAND	SET	20.0	0.3	3999	500689
						LIFT	20.9	0.3	1999	314089
			2	3.0	SILT & CLAY	SET	20.0	0.3	3999	500693
						LIFT	20.9	0.4	2500	314089
			3	3.0	SILT & CLAY	SET	20.5	0.2	4500	500713
						LIFT	20.8	0.3	1300	314086
			4	3.0	SILT & CLAY	SET	20.5	0.2	4500	500716
						LIFT	20.8	0.2	1199	314088

6/20/83	DETROIT	STONY	1	3.0	RUBBLE	SET	20.1	0.7	4600	500988
			2	4.0	RUBBLE	LIFT	21.0	0.6	1800	314228
			3	5.0	RUBBLE	SET	20.1	0.7	4600	500990
			4	6.0	RUBBLE	LIFT	21.0	0.7	1500	314231
						SET	21.0	1.3	4199	500997
						LIFT	21.0	1.2	1999	314241
						SET	21.0	1.4	4199	500999
						LIFT	21.0	1.5	1999	314247

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	ST. CLAIR	STAG	LOCATION NO.	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
7/25/83												
					1	4.5	SAND	SET	20.0	1.7	3500	497394
								LIFT	19.8	2.2	2699	309026
					2	4.2	SAND	SET	20.0	1.7	3500	497390
								LIFT	19.8	2.1	2899	309036
					3	4.0	SAND	SET	20.0	1.5	3800	497388
								LIFT	19.8	1.9	2800	309028
					4	4.0	SAND	SET	20.0	1.5	3600	497399
								LIFT	19.8	2.0	2699	309034
					1	3.0	RUBBLE	SET	20.5	0.6	4000	498268
								LIFT	20.0	0.6	3899	309585
					2	3.1	RUBBLE	SET	20.5	0.6	3800	498267
								LIFT	20.0	0.6	3899	309583
					3	3.5	RUBBLE	SET	20.5	0.7	3600	498270
								LIFT	20.5	0.7	4000	309592
					4	3.0	SILT & CLAY	SET	20.5	0.6	3500	498273
								LIFT	20.5	0.7	3899	309594
					1	4.6	SAND	SET	20.5	1.3	2899	498862
								LIFT	20.2	1.0	3899	310162
					2	4.7	SAND	SET	20.5	1.4	2899	498665
								LIFT	20.2	1.0	3899	310068
					3	5.1	SILT & CLAY	SET	20.5	1.5	2699	498664
								LIFT	20.0	1.1	4000	309964
					4	5.4	SILT & CLAY	SET	20.5	1.4	2600	498664
								LIFT	20.0	1.1	4000	309965
					1	4.0	SILT & CLAY	SET	20.5	0.3	2500	499968
								LIFT	20.0	0.2	4000	312783
					2	4.0	SILT & CLAY	SET	20.5	0.3	2500	499970
								LIFT	20.0	0.2	4000	312784
					3	4.0	SILT & CLAY	SET	20.5	0.2	3300	499993
								LIFT	21.0	0.4	4000	312839
					4	4.0	SILT & CLAY	SET	20.5	0.2	3300	499994
								LIFT	21.0	0.4	4000	312842
					1	6.0	SILT & CLAY	SET	23.5	0.2	2899	500681
								LIFT	24.0	0.2	350	314067
					2	6.0	SILT & CLAY	SET	23.5	0.2	2800	500678
								LIFT	24.0	0.2	350	414066
					3	5.2	SILT & CLAY	SET	23.5	0.3	3300	500714
								LIFT	24.0	0.1	350	314080
					4	3.7	SILT & CLAY	SET	23.5	0.3	3600	500711
								LIFT	24.0	0.1	350	314086

7/25/83	DETROIT	STONY	1	3.6	RUBBLE	SET	24.0	2.1	4600	500984
			2	6.0	RUBBLE	LIFT	24.0	1.7	550	314234
			3	5.4	RUBBLE	SET	24.0	2.0	4600	500988
			4	4.7	RUBBLE	LIFT	24.0	1.5	550	314231
						SET	24.0	1.1	4399	500997
						LIFT	24.0	1.2	600	314249
						SET	24.0	1.2	4300	501000
						LIFT	24.0	1.2	600	314251

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
9/ 6/83	ST. CLAIR	STAG	1	4.7	SAND	SET	22.1	1.5	2500	497394
						LIFT	21.7	1.9	1800	309025
			2	4.9	SAND	SET	22.1	1.6	2500	497391
						LIFT	21.7	1.8	1800	309036
			3	4.5	SAND	SET	22.6	0.6	3699	497386
						LIFT	21.6	0.3	1899	309027
			4	4.0	SAND	SET	22.6	0.5	3699	497400
						LIFT	21.7	0.3	2000	309033

		FAWN	1	3.2	SILT & CLAY	SET	22.9	0.7	3500	498271
						LIFT	22.2	0.3	3399	309593
			2	3.2	SILT & CLAY	SET	22.9	0.7	3500	498271
						LIFT	22.3	0.3	3399	309593
			3	3.1	SILT & CLAY	SET	23.3	0.6	4399	498279
						LIFT	22.4	0.9	3800	309612
			4	3.4	SILT & CLAY	SET	23.3	0.6	4399	498679
						LIFT	22.4	1.0	3899	309612

		RUSSELL	1	4.2	SAND	SET	22.2	0.3	1899	498662
						LIFT	22.1	0.8	3999	309964
			2	5.1	SAND	SET	22.2	0.3	1899	498666
						LIFT	22.1	0.7	3899	309961
			3	3.8	SILT & CLAY	SET	22.3	0.7	1899	498661
						LIFT	22.4	0.4	4500	309970
			4	3.1	SILT & CLAY	SET	22.3	0.7	1899	498658
						LIFT	22.4	0.5	4500	309974

		DETROIT								
		BELLE	1	4.6	RUBBLE	SET	22.9	0.5	2500	499968
						LIFT	22.8	0.2	2500	312782
			2	5.2	RUBBLE	SET	22.9	0.5	2500	499971
						LIFT	22.8	0.2	2500	312784
			3	3.6	SILT & CLAY	SET	23.1	0.4	3899	499991
						LIFT	23.0	0.2	2500	312839
			4	3.9	SILT & CLAY	SET	23.1	0.4	3899	499993
						LIFT	23.0	0.3	2500	312840

		HENNEPIN	1	5.0	SILT & CLAY	SET	23.6	0.5	3000	500695
						LIFT	23.4	0.7	3800	314084
			2	5.2	SILT & CLAY	SET	23.6	0.5	3000	500698
						LIFT	23.4	0.7	3800	314086
			3	4.1	SILT & CLAY	SET	23.6	0.2	3800	500713
						LIFT	23.1	0.3	3600	314081
			4	3.8	SILT & CLAY	SET	23.6	0.2	3300	500710
						LIFT	23.2	0.3	3600	314087

9/ 6/83	DETROIT	STONY	1	4.8	RUBBLE	SET	23.6	1.5	3399	500984
			2	5.6	RUBBLE	LIFT	23.8	1.5	3300	314235
			3	3.9	RUBBLE	SET	23.6	1.6	3399	500987
			4	4.1	RUBBLE	LIFT	23.8	1.5	3300	314232
						SET	23.7	0.7	4000	500986
						LIFT	23.9	0.7	2500	314249
						SET	23.7	0.7	4000	501000
						LIFT	23.9	0.7	2500	314250

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
10/ 4/83	ST. CLAIR	STAG	1	5.1	SAND	SET	18.0	1.8	589	497399
						LIFT	18.0	1.4	48	309034
			2	3.8	SAND	SET	18.0	1.7	589	497386
						LIFT	18.0	1.4	48	309027
			3	4.2	SAND	SET	18.0	0.2	330	497400
						LIFT	18.0	0.1	58	309033
			4	4.0	SAND	SET	18.0	0.2	330	497413
						LIFT	18.0	0.1	58	309048
		FAWN	1	5.5	SILT & CLAY	SET	18.5	0.4	680	498267
						LIFT	18.0	0.7	739	309589
			2	5.0	SILT & CLAY	SET	18.5	0.5	680	498269
						LIFT	18.0	0.7	739	309590
			3	3.1	SILT & CLAY	SET	18.5	0.7	230	498288
						LIFT	18.0	0.6	769	309623
			4	3.4	SILT & CLAY	SET	18.5	0.7	230	498286
						LIFT	18.0	0.6	769	309622
		RUSSELL	1	4.6	SILT & CLAY	SET	18.5	0.4	460	499981
						LIFT	18.0	0.3	539	312804
			2	4.3	SILT & CLAY	SET	18.5	0.5	460	499981
						LIFT	18.0	0.3	539	312806
			3	3.5	SAND	SET	18.5	1.2	530	498666
						LIFT	18.0	0.7	719	309965
			4	3.3	SAND	SET	18.5	1.2	530	498664
						LIFT	18.0	0.7	730	309964
		DETROIT	1	5.5	RUBBLE	SET	18.5	1.0	2300	499968
						LIFT	18.0	0.4	500	312782
			2	5.5	RUBBLE	SET	18.5	1.0	2300	499971
						LIFT	18.0	0.4	500	312784
			3	4.0	SILT & CLAY	SET	18.0	0.2	2399	499991
						LIFT	18.5	0.6	450	312839
			4	4.0	SILT & CLAY	SET	18.0	0.2	2399	499993
						LIFT	18.5	0.6	450	312840
		HENNEPIN	1	5.0	SILT & CLAY	SET	18.0	0.4	130	500676
						LIFT	18.0	0.3	3000	814066
			2	5.0	SILT & CLAY	SET	18.0	0.4	130	500678
						LIFT	18.0	0.3	3000	814066
			3	5.0	SILT & CLAY	SET	18.0	0.4	350	500710
						LIFT	18.0	0.5	2800	814079
			4	5.0	SILT & CLAY	SET	18.0	0.4	350	500710
						LIFT	18.0	0.5	2800	814081

10/ 4/83	DETROIT	STONY	1	3.6	SILT & CLAY	SET	19.0	0.4	319	500987
						LIFT	18.0	0.3	3500	314232
			2	3.3	SILT & CLAY	SET	19.0	0.4	319	500991
						LIFT	18.0	0.3	3500	314230
			3	5.1	RUBBLE	SET	19.0	1.5	189	500996
						LIFT	18.0	1.6	400	314249
			4	4.6	RUBBLE	SET	19.0	1.5	189	500996
						LIFT	18.0	1.6	400	314249

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
5/21/84	ST. CLAIR	STAG	1	5.0	SAND	SET	9.0	1.9	4000	0
						LIFT	9.0	1.4	1399	0
			2	5.0	SAND	SET	9.0	1.9	4000	0
						LIFT	9.0	1.4	1399	0
			3	5.5	SAND	SET	9.0	0.5	4000	0
						LIFT	9.5	0.4	650	0
			4	5.5	SAND	SET	9.0	0.5	4000	0
						LIFT	9.5	0.4	650	0
	FAWN		1	4.0	SAND	SET	9.0	1.7	4000	0
						LIFT	9.5	0.7	2800	0
			2	4.0	SAND	SET	9.0	1.7	4000	0
						LIFT	9.5	0.7	2800	0
			3	3.0	SAND	SET	9.5	1.2	4000	0
						LIFT	10.0	0.4	1800	0
			4	3.0	SAND	SET	9.5	1.2	4000	0
						LIFT	10.0	0.4	1800	0
	RUSSELL		1	4.0	SAND	SET	9.5	1.9	4899	0
						LIFT	10.0	1.5	3399	0
			2	4.0	SAND	SET	9.5	1.9	4899	0
						LIFT	10.0	1.5	3399	0
			3	6.0	SAND	SET	9.5	1.8	1000	0
						LIFT	10.0	1.8	3399	0
			4	6.0	SAND	SET	9.5	1.8	1000	0
						LIFT	10.0	1.8	3399	0
DETROIT	BELLE		1	4.0	SILT & CLAY	SET	12.0	0.0	2600	0
						LIFT	12.0	0.4	3300	0
			2	4.0	SILT & CLAY	SET	12.0	0.0	2600	0
						LIFT	12.0	0.4	3300	0
			3	6.0	RUBBLE	SET	11.5	1.1	2800	0
						LIFT	12.0	0.2	3800	0
			4	6.0	RUBBLE	SET	11.5	1.1	2800	0
						LIFT	12.0	0.2	3800	0
	HENNEPIN		1	5.0	RUBBLE	SET	12.0	0.7	3800	0
						LIFT	12.5	0.5	2600	0
			2	5.0	RUBBLE	SET	12.0	0.7	3800	0
						LIFT	12.5	0.5	2600	0
			3	5.0	SILT & CLAY	SET	12.5	0.6	4000	0
						LIFT	12.5	0.8	2800	0
			4	5.0	SILT & CLAY	SET	12.5	0.6	4000	0
						LIFT	12.5	0.8	2800	0

5/21/84	DETROIT	STONY	1	6.0	RUBBLE	SET	12.5	1.7	4000	0
			2	6.0	RUBBLE	LIFT	12.0	1.9	4000	0
			3	4.0	SILT & CLAY	SET	12.5	1.7	4000	0
			4	4.0	SILT & CLAY	LIFT	12.0	1.9	4000	0
						SET	12.5	1.5	4000	0
						LIFT	12.5	2.1	4000	0
						SET	12.5	1.5	4000	0
						LIFT	12.5	2.1	4000	0

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
6/12/84	ST. CLAIR	STAG	1	4.0	SAND	SET	11.5	1.9	3000	0
						LIFT	11.0	1.1	1800	0
			2	4.0	SAND	SET	11.5	1.9	3000	0
						LIFT	11.0	1.1	1800	0
			3	4.0	SAND	SET	12.0	0.4	3399	0
						LIFT	11.0	0.0	1399	0
			4	4.0	SAND	SET	12.0	0.4	3399	0
						LIFT	11.0	0.0	1399	0
		FAWN	1	3.0	SAND	SET	12.0	1.6	4500	0
						LIFT	11.5	1.4	4000	0
			2	3.0	SAND	SET	12.0	1.6	4500	0
						LIFT	11.5	1.4	4000	0
			3	3.0	SAND	SET	12.0	1.1	4500	0
						LIFT	11.5	1.1	3199	0
			4	3.0	SAND	SET	12.0	1.1	4500	0
						LIFT	11.5	1.1	3199	0
		RUSSELL	1	4.0	SAND	SET	12.0	1.5	3600	0
						LIFT	12.0	2.1	4500	0
			2	4.0	SAND	SET	12.0	1.5	3600	0
						LIFT	12.0	2.1	4500	0
			3	3.0	SAND	SET	12.0	1.7	3600	0
						LIFT	12.0	1.8	4000	0
			4	3.0	SAND	SET	12.0	1.7	3600	0
						LIFT	12.0	1.8	4000	0
		DETROIT	1	5.0	RUBBLE	SET	18.0	0.3	1000	499968
						LIFT	17.9	0.3	1899	312778
			2	5.0	RUBBLE	SET	18.0	0.3	1000	0
						LIFT	17.9	0.3	1899	0
			3	4.0	SILT & CLAY	SET	18.0	0.3	4399	499992
						LIFT	17.9	0.2	1000	312838
			4	4.0	SILT & CLAY	SET	18.0	0.3	4399	0
						LIFT	17.9	0.2	1000	0
		HENNEPIN	1	5.5	SILT & CLAY	SET	18.8	0.3	4000	0
						LIFT	19.5	0.2	3699	0
			2	5.4	SILT & CLAY	SET	18.8	0.3	4000	0
						LIFT	19.5	0.2	3699	0
			3	5.8	SILT & CLAY	SET	18.9	0.5	4100	0
						LIFT	19.5	0.6	4000	0
			4	5.7	SILT & CLAY	SET	18.9	0.5	4100	0
						LIFT	19.5	0.6	4000	0

6/12/84	DETROIT	STONY	1	4.5	RUBBLE	SET	18.5	1.5	4300	0
			2	4.8	RUBBLE	LIFT	19.0	1.5	2899	0
			3	5.0	RUBBLE	SET	18.5	1.5	4300	0
			4	5.0	RUBBLE	LIFT	19.0	1.5	2899	0
						SET	18.8	2.4	3199	0
						LIFT	19.0	2.8	3399	0
						SET	18.8	2.4	3199	0
						LIFT	19.0	2.8	3399	0

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
7/23/84	ST. CLAIR	STAG	1	4.0	SAND	SET	19.0	2.3	910	0
						LIFT	18.8	2.3	380	0
			2	3.0	SAND	SET	19.0	2.3	910	0
						LIFT	18.8	2.3	380	0
			3	3.0	SAND	SET	19.2	0.3	2699	0
						LIFT	19.7	0.1	619	0
			4	4.0	SAND	SET	19.2	0.3	2699	0
						LIFT	19.7	0.1	619	0
			1	3.0	SAND	SET	19.7	0.6	3000	0
			2	3.0	SAND	SET	19.7	0.6	839	0
						LIFT	20.0	0.6	3000	0
			3	4.0	SAND	SET	19.7	1.1	839	0
						LIFT	20.0	1.1	4000	0
			4	4.0	SAND	SET	19.7	1.1	1000	0
						LIFT	20.0	1.1	4000	0
			1	4.0	SAND	SET	20.0	1.1	1000	0
			2	4.0	SAND	SET	20.0	0.4	4300	0
						LIFT	20.0	0.6	5100	0
			3	5.0	SAND	SET	20.0	0.6	4300	0
						LIFT	20.0	1.1	5100	0
			4	4.0	SAND	SET	20.0	0.9	4300	0
						LIFT	20.0	1.1	5100	0
			1	5.0	SILT & CLAY	SET	20.0	0.2	4699	0
			2	5.0	SILT & CLAY	SET	20.0	0.2	4500	0
						LIFT	25.0	0.2	4699	0
			3	6.0	RUBBLE	SET	20.0	0.5	4500	0
						LIFT	24.2	0.3	5000	0
			4	6.0	RUBBLE	SET	20.0	0.5	2699	0
						LIFT	24.2	0.3	5000	0
			1	5.0	SILT & CLAY	SET	20.0	0.1	3000	0
			2	5.0	SILT & CLAY	SET	20.0	0.0	3500	0
						LIFT	25.0	0.1	3000	0
			3	5.0	SILT & CLAY	SET	20.0	0.1	3899	0
						LIFT	25.0	0.1	3300	0
			4	5.0	SILT & CLAY	SET	20.0	0.1	3899	0
						LIFT	25.0	0.1	3300	0

7/23/84	DETROIT	STONY	1	5.0	RUBBLE	SET	20.0	1.6	4500	0
			2	5.0	RUBBLE	LIFT	24.0	1.9	3800	0
			3	4.0	RUBBLE	SET	20.0	1.6	4500	0
			4	4.0	RUBBLE	LIFT	24.0	1.9	3800	0
						SET	20.0	2.2	4800	0
						LIFT	24.0	2.2	4399	0
						SET	20.0	2.2	4800	0
						LIFT	24.0	2.2	4399	0

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
9/ 4/84	ST. CLAIR	STAG	1	3.0	SAND	SET	22.0	1.7	3699	0
			2	3.0	SAND	LIFT	22.0	2.1	2500	0
			3	3.0	SAND	SET	22.0	1.7	3699	0
			4	3.0	SAND	LIFT	22.0	2.1	2500	0
			3	3.0	SAND	SET	22.0	0.5	8600	0
			4	3.0	SAND	LIFT	21.0	0.8	3600	0
			4	3.0	SAND	SET	22.0	0.5	8600	0
			4	3.0	SAND	LIFT	21.0	0.8	3600	0
			1	3.0	SILT & CLAY	SET	22.0	0.7	2500	0
			2	3.0	SILT & CLAY	LIFT	22.0	0.9	1300	0
			3	3.0	SAND	SET	22.0	0.7	2500	0
			4	3.0	SAND	LIFT	22.0	0.9	1900	0
			4	3.0	SAND	SET	22.0	0.7	4000	0
			4	3.0	SAND	LIFT	22.0	0.9	4500	0
			4	3.0	SAND	SET	22.0	0.7	4000	0
			4	3.0	SAND	LIFT	22.0	0.8	4500	0
			1	3.0	SILT & CLAY	SET	22.0	0.7	3399	0
			2	4.0	SILT & CLAY	LIFT	22.0	0.5	1600	0
			3	3.0	SILT & CLAY	SET	22.0	0.7	3399	0
			4	3.0	SILT & CLAY	LIFT	22.0	0.5	1600	0
			4	3.0	SILT & CLAY	SET	22.0	0.9	3199	0
			4	3.0	SILT & CLAY	LIFT	22.0	0.1	1300	0
			4	3.0	SILT & CLAY	SET	22.0	0.9	3199	0
			4	3.0	SILT & CLAY	LIFT	22.0	0.1	1300	0
			1	6.0	RUBBLE	SET	21.0	0.1	700	0
			2	6.0	RUBBLE	LIFT	21.0	0.2	4300	0
			3	5.0	SILT & CLAY	SET	21.0	0.1	700	0
			4	5.0	SILT & CLAY	LIFT	21.0	0.2	4300	0
			4	5.0	SILT & CLAY	SET	21.0	0.0	3699	0
			4	5.0	SILT & CLAY	LIFT	21.0	0.2	1899	0
			4	5.0	SILT & CLAY	SET	21.0	0.0	3699	0
			4	5.0	SILT & CLAY	LIFT	21.0	0.2	3699	0
			1	6.0	SILT & CLAY	SET	21.0	0.6	500	0
			2	6.0	SILT & CLAY	LIFT	21.0	0.3	569	0
			3	6.0	SILT & CLAY	SET	21.0	0.6	500	0
			4	6.0	SILT & CLAY	LIFT	21.0	0.3	569	0
			4	6.0	SILT & CLAY	SET	21.0	0.2	130	0
			4	6.0	SILT & CLAY	LIFT	21.0	0.2	460	0
			4	6.0	SILT & CLAY	SET	21.0	0.2	130	0
			4	6.0	SILT & CLAY	LIFT	21.0	0.2	460	0

9/ 4/84	DETROIT	STONY	1	6.0	RUBBLE	SET	21.0	0.8	610	0
			2	6.0	RUBBLE	LIFT	21.0	1.7	130	0
			3	6.0	RUBBLE	SET	21.0	0.8	610	0
			4	6.0	RUBBLE	LIFT	21.0	1.7	130	0
						SET	21.0	0.9	450	0
						LIFT	21.0	1.0	150	0
						SET	21.0	0.9	450	0
						LIFT	21.0	1.0	150	0

APPENDIX
HOOPNET STATION PHYSICAL DATA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/LOWER)
10/ 2/84	ST. CLAIR	STAG	1	4.0	SAND	SET	14.0	1.6	2600	0
						LIFT	14.0	1.0	1199	0
			2	3.0	SAND	SET	14.0	1.6	2600	0
						LIFT	14.0	1.0	1199	0
			3	6.0	SILT & CLAY	SET	15.0	0.3	4199	0
						LIFT	14.0	0.3	1199	0
			4	5.0	SILT & CLAY	SET	15.0	0.3	4199	0
						LIFT	14.0	0.3	1199	0
		FAWN	1	5.0	SAND	SET	15.0	0.8	4699	0
						LIFT	14.0	0.5	3100	0
			2	4.0	SAND	SET	15.0	0.8	4699	0
						LIFT	14.0	0.5	3100	0
			3	4.0	SAND	SET	15.0	0.5	3500	0
						LIFT	14.0	0.5	3100	0
			4	4.0	SAND	SET	15.0	0.5	3500	0
						LIFT	14.0	0.5	3100	0
		RUSSELL	1	5.0	SILT & CLAY	SET	15.0	0.8	4399	0
						LIFT	14.0	0.4	3899	0
			2	5.0	SILT & CLAY	SET	15.0	0.8	4399	0
						LIFT	14.0	0.4	3899	0
			3	5.0	SILT & CLAY	SET	15.0	1.1	4199	0
						LIFT	14.0	1.1	3199	0
			4	5.0	SILT & CLAY	SET	15.0	1.1	4199	0
						LIFT	14.0	1.1	3199	0
		DETROIT								
		BELLE	1	5.0	RUBBLE	SET	14.0	0.8	3399	0
						LIFT	14.0	0.5	4500	0
			2	5.0	RUBBLE	SET	14.0	0.8	3399	0
						LIFT	14.0	0.5	4500	0
			3	3.0	SILT & CLAY	SET	14.0	0.2	2500	0
						LIFT	15.0	0.2	3199	0
			4	3.0	SILT & CLAY	SET	14.0	0.2	2500	0
						LIFT	15.0	0.2	3199	0
		HENNEPIN	1	5.0	SILT & CLAY	SET	13.0	0.1	1000	0
						LIFT	14.0	0.4	1899	0
			2	4.0	SILT & CLAY	SET	13.0	0.1	1000	0
						LIFT	14.0	0.4	1899	0
			3	3.0	SILT & CLAY	SET	14.0	0.2	1699	0
						LIFT	14.0	0.3	1899	0
			4	4.0	SILT & CLAY	SET	14.0	0.2	1699	0
						LIFT	14.0	0.3	1899	0

10/ 2/84	DETROIT	STONY	1	3.0	RUBBLE	SET	14.0	1.1	2699	0
			2	4.0	RUBBLE	LIFT	13.0	1.1	1300	0
			3	4.0	RUBBLE	SET	14.0	1.1	2699	0
			4	5.0	RUBBLE	LIFT	13.0	1.5	1300	0
						SET	14.0	2.2	2600	0
						LIFT	13.0	1.5	1100	0
								2.2	2600	0
									1100	0